

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:14:59 ; Search time 170.563 Seconds
(without alignments)
4233.600 Million cell updates/sec

Title: US-09-806-703A-4

Perfect score: 6812

Sequence: 1 MELAALCRWGLLLALLPPGA.....TFKGTPTAENPEYLGLDVVP 1255

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt_02.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6806	99.9	1255	1 ERB2 HUMAN	P04626 homo sapien
2	6295	92.4	1259	2 O18735	O18735 canis famil
3	5998.5	88.1	1259	2 Q8K3F9	Q8K3F9 rattus norv
4	5994.5	88.0	1259	2 Q6P732	Q6P732 rattus norv
5	5994.5	88.0	1259	2 AAH61863	AAH61863 rattus no
6	5994	88.0	1257	1 ERB2 RAT	P06494 rattus norv
7	5984.5	87.9	1254	1 ERB2 MESAU	Q60553 mesocricetu
8	5973.5	87.7	1305	2 Q6ZPE0	Q6ZPE0 mus musculu
9	5973.5	87.7	1305	2 BAC98297	BAC98297 mus muscu
10	4207	61.8	881	2 Q8C0E7	Q8C0E7 m mus muscu
11	3255.5	47.8	711	2 Q80Y89	Q80Y89 mus musculu
12	3171	46.6	1209	2 Q9QX70	Q9QX70 rattus norv
13	3166	46.5	1210	1 EGFR HUMAN	P00533 homo sapien
14	3166	46.5	1210	2 AAS83109	AAS83109 homo sapi
15	3153.5	46.3	1209	2 Q8M1L8	Q8M1L8 sus scrofa
16	3145	46.2	1210	1 EGFR MOUSE	Q01279 mus musculu
17	3142	46.1	1210	2 Q9EP98	Q9EP98 mus musculu
18	3003.5	44.1	1308	1 ERB4 HUMAN	Q15303 homo sapien
19	3001	44.1	1292	2 Q6UA28	Q6UA28 rattus norv
20	3001	44.1	1292	2 AAQ77349	AAQ77349 rattus no
21	2999	44.0	1308	2 Q6UA29	Q6UA29 rattus norv
22	2999	44.0	1308	2 AAQ77348	AAQ77348 rattus no
23	2988.5	43.9	1191	2 Q7SZF7	Q7SZF7 brachydanio
24	2984	43.8	1308	1 ERB4 RAT	Q62956 rattus norv
25	2979.5	43.7	1191	2 Q6VQA3	Q6VQA3 brachydanio
26	2979.5	43.7	1191	2 AAQ91602	AAQ91602 brachydan
27	2879.5	42.3	1209	2 Q6XJV8	Q6XJV8 xiphophorus
28	2879.5	42.3	1209	2 AAP55673	AAP55673 xiphophorus
29	2751	40.4	1165	2 Q9YH40	Q9YH40 xiphophorus
30	2729.5	40.1	1137	2 Q9W6F6	Q9W6F6 gallus gall
31	2717.5	39.9	1167	1 XMRK_XIPMA	P13388 xiphophorus

32 2440.5 35.8 1342 1 ERB3 HUMAN
33 2369.5 34.8 1339 1 ERB3 RAT
34 2326 34.1 1328 2 P79754
35 2212.5 32.5 1305 2 Q8AW81
36 2063 30.3 1429 2 Q7PEN5
37 2049.5 30.1 1340 2 Q7PHU6
38 2044.5 30.0 1433 2 Q9BIH9
39 2025.5 29.7 435 2 Q6ZMM4
40 2025.5 29.7 435 2 BAD18701
41 2012.5 29.5 1377 2 Q8MLW0
42 2009 29.5 1325 2 Q6SAI6
43 2009 29.5 1325 2 AAR85155
44 2009 29.5 1325 2 AAR85225
45 2009 29.5 1325 2 AAR85252

ALIGNMENTS

RESULT 1

ERB2 HUMAN
ID ERB2 HUMAN STANDARD; PRT; 1255 AA.
AC P04626;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Tyrosine kinase-type cell surface receptor HER2) (MLN 19).
DE Name=ERBB2; Synonyms=HER2, NGL, NEU;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=86118663; PubMed=3003577;
RA Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N., Saito T., Toyoshima K.;
RA "Similarity of protein encoded by the human c-erbB-2 gene to epidermal growth factor receptor."
RL Nature 319:230-234 (1986).
[2]
RP SEQUENCE FROM N.A., AND VARIANT ALA-1170.
RX MEDLINE=86070181; PubMed=2999974;
RA Coussens L., Yang-Feng T.L., Liao Y.C., Chen E., Gray A., McGrath J., Seeburg P.H., Libermann T.A., Schlessinger J., Francke U., Levinson A., Ullrich A.;
RA "Tyrosine kinase receptor with extensive homology to EGF receptor shares chromosomal location with neu oncogene."
RL Science 230:1132-1139 (1985).
[3]
RP SEQUENCE FROM N.A., AND VARIANTS CYS-452; VAL-655 AND ALA-1170.
RA Rieder M.J., Livingston R.J., Daniels M.R., Montoya M.A., Chung M.-W., Miyamoto K.E., Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S., Sherwood J.K., Witrak L.A., Nickerson D.A.;
RA "NIH-SNPs, environmental genome project, NIHES ES15478, Department of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
RL Submitted (DEC-2002) to the EMBL/GenBank/DBJ databases.
[4]
RP SEQUENCE OF 737-1031 FROM N.A.
RX MEDLINE=86016729; PubMed=2995967;
RA Samba K., Kanata N., Toyoshima K., Yamamoto T.;
RA "A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epidermal growth factor-receptor gene and is amplified in a human salivary gland adenocarcinoma."
RL Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501 (1985).
[5]
RP VARIANTS VAL-654 AND VAL-655.
RX MEDLINE=93194196; PubMed=8095488;
RA Ehsani A., Low J., Wallace R.B., Wu A.M.;
RA "Characterization of a new allele of the human ERBB2 gene by allele-specific competition hybridization.";

FT HELIX 175 177
FT TURN 178 179

Query Match 99.9%; Score 6806; DB 1; Length 1255;
Best Local Similarity 99.8%; Pred. No. 0;
Matches 1253; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPFGAASCTGCTGDMKRLRASPETHDMLRHLHYQGCVVQGNL 60
Db 1 MELAALCRWGLLALLPFGAASCTGCTGDMKRLRASPETHDMLRHLHYQGCVVQGNL 60

Qy 61 ELTYLPTNASISFLQDIOEQVGYVLIHQNVRQVLPQRLRIVRGTLQFEDNYALAVLDNG 120
Db 61 ELTYLPTNASISFLQDIOEQVGYVLIHQNVRQVLPQRLRIVRGTLQFEDNYALAVLDNG 120

Qy 121 DPLNNTTPVTGASPGGLREQLRLSLTEILKGGVLIQRNPOLCYODTTLWKDIFHKNNOLA 180
Db 121 DPLNNTTPVTGASPGGLREQLRLSLTEILKGGVLIQRNPOLCYODTTLWKDIFHKNNOLA 180

Qy 181 LTLIDTNRSRACHPCSPMKGSRGCSWGSSEDCQSLTRTVGAGCARCKGPLPTDCCHQC 240
Db 181 LTLIDTNRSRACHPCSPMKGSRGCSWGSSEDCQSLTRTVGAGCARCKGPLPTDCCHQC 240

Qy 241 AAGCTGPKHSDCLACHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300

Qy 301 YNYLSTDVSGCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVITSAN 360
Db 301 YNYLSTDVSGCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVITSAN 360

Qy 361 IQBFAGCKKIFGSLAFIPESFDGDPASNTAPLOEQLOVFETLEETIGYLYISAWPDSL 420
Db 361 IQBFAGCKKIFGSLAFIPESFDGDPASNTAPLOEQLOVFETLEETIGYLYISAWPDSL 420

Qy 421 DLSVFQNLQVIRGRILHNGAYSITLQGLISWLGRLSLRGLSGALIHHTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSITLQGLISWLGRLSLRGLSGALIHHTHLCFVHTV 480

Qy 481 PWDLFENPHOALLHTANRDECEVGLGACHQICARGHCWGPGPTQVCNCSQFLRGQEC 540
Db 481 PWDLFENPHOALLHTANRDECEVGLGACHQICARGHCWGPGPTQVCNCSQFLRGQEC 540

Qy 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADOCVCAHYKDPFPCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADOCVCAHYKDPFPCVARC 600

Qy 601 PSGVKPDLSPYMPKPFDEGACQPCPINCTHSCVDLDDKCPAQRASPLTSIVSAVVG 660
Db 601 PSGVKPDLSPYMPKPFDEGACQPCPINCTHSCVDLDDKCPAQRASPLTSIVSAVVG 660

Qy 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLKETEL 720
Db 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLKETEL 720

Qy 721 RKVKVLGSGAGFTYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVWAGVSP 780
Db 721 RKVKVLGSGAGFTYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVWAGVSP 780

Qy 781 YVSRLLGICLTSTVQLVTQMPYGCGLLDHVRENRGLSGDQLLNCWQIAKGSYLEDVR 840
Db 781 YVSRLLGICLTSTVQLVTQMPYGCGLLDHVRENRGLSGDQLLNCWQIAKGSYLEDVR 840

Qy 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKWMALISILRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKWMALISILRRFT 900

Qy 901 HQSDVWSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPPICTIDVYMWKCM 960
Db 901 HQSDVWSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPPICTIDVYMWKCM 960

Qy 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020

Db 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020

Qy 1021 EBYLVPOQGFCDPAPAGAGWVHRRSSSTSGGDLTLGLEPSEEEAPRSPAPSEG 1080
Db 1021 EBYLVPOQGFCDPAPAGAGWVHRRSSSTSGGDLTLGLEPSEEEAPRSPAPSEG 1080

Qy 1081 AGSDVDGDLGMAAGKQLSLTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVDGDLGMAAGKQLSLTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140

Qy 1141 NQPDVPRQPPSPREGPLPAARPAAGATLERAKTLSPGKNGVVKOVFAFGGAVENPEYLTTPQ 1200
Db 1141 NQPDVPRQPPSPREGPLPAARPAAGATLERAKTLSPGKNGVVKOVFAFGGAVENPEYLTTPQ 1200

Qy 1201 GGAAPHPHPPAPSPAFDNLVYWDQPPPERGAPSTFKGTAPENPEYLGLDVVP 1255
Db 1201 GGAAPHPHPPAPSPAFDNLVYWDQPPPERGAPSTFKGTAPENPEYLGLDVVP 1255

RESULT 2
O18735 PRELIMINARY; PRT; 1259 AA.

AC O18735;
DT 01-JAN-1998 (T-EMBLrel. 05, Created)
DT 01-JAN-1998 (T-EMBLrel. 05, Last sequence update)
DT 01-MAR-2004 (T-EMBLrel. 26, Last annotation update)
DE Eribb-2.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Canidae; Canis.
ON NCBI_TaxID=9615;
RX [1]
RP SEQUENCE FROM N.A.
RA Yokota H.;
RL Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB008451; BAA23127.1; -.
DR HSSP; P04626; 1N8Z.
DR GO; GO:0016020; C:membrane; IEA.
DR GO; GO:0005524; F:ATP binding; IEA.
DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
DR GO; GO:0016740; F:transferase activity; IEA.
DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow fac. recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; prot. kinase.
DR InterPro; IPR001245; Tyr. kinase.
DR InterPro; IPR008266; Tyr. kinase AS.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; pkinase; 1.
DR Pfam; PF01030; Recep.L domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot. kinase; 1.
DR SMART; SM00261; FU; 3.
DR SMART; SM00219; TyrKc; 1.
DR PROSITE; PS00018; EF HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS00011; PROTEIN KINASE DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
SQ SEQUENCE 1259 AA; 137989 MW; E37364D49C4ACD46 CRC64;

Query Match 92.4%; Score 6295; DB 2; Length 1259;
Best Local Similarity 92.1%; Pred. No. 0;
Matches 1160; Conservative 39; Mismatches 55; Indels 6; Gaps 2;

Qy 1 MELAALCRWGLLALLPFGAASCTGCTGDMKRLRASPETHDMLRHLHYQGCVVQGNL 60

Db 1 MELAAWCRGGLALLPSPGAGTQVCTGDMKLRIPASPTHLDMLRHLYQCGQVQGNL 60
QY 61 ELYLPTNASLFLQDIQEVQGVYLIHNOVQVPLQRLIRVRGTOLFDENYALAVLDNG 120
Db 61 ELYLPTNASLFLQDIQEVQGVYLIHNOVQVPLQRLIRVRGTOLFDENYALAVLDNG 120
QY 121 DPLANNTPVTGASPGGLRELQRLSTLILKGGVLIQORNQOLCYQDPTLAKDIFHKNNOLA 180
Db 121 DPLGGIPAGAAQGGRELQRLSTLILKGGVLIQORNQOLCYQDPTLAKDIFHKNNOLA 180
QY 181 LTLIDNTRSRACHPCSPMKCKSGCWSESSDCQSLTRTVACAGCARCKGPLEPTDCCHQC 240
Db 181 LTLIDNTRSRACHPCSPMKCKSGCWSESSDCQSLTRTVACAGCARCKGPLEPTDCCHQC 240
QY 241 AGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPGRYTFGASCVTACP 300
Db 241 AGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPGRYTFGASCVTACP 300
QY 301 YNVLSTDVSGCTLVCPHNOEVTAEQGTORCEKSKPCARVCVGLGMEHLREVRVTSAN 360
Db 301 YNVLSTDVSGCTLVCPHNOEVTAEQGTORCEKSKPCARVCVGLGMEHLREVRVTSAN 360
QY 361 IQEFAGCKIFGSLAFPSFDGDPASNTAPLOPEQLQVFETLEETGYLYISAWPDSL 420
Db 361 IQEFAGCKIFGSLAFPSFDGDPASNTAPLOPEQLQVFETLEETGYLYISAWPDSL 420
QY 421 DLSVFONQVIRGRIHNGAYSITLQGLGSIWGLSLRELGSGLAIHNNHLCFVHTV 480
Db 421 NLSVFONQVIRGRIHNGAYSITLQGLGSIWGLSLRELGSGLAIHNNHLCFVHTV 480
QY 481 PNDOLFERNHQAHLHTANPEDECVGEGACHQLCARGHCWGPGTQCNCQFRLGQBC 540
Db 481 PNDOLFERNHQAHLHTANPEDECVGEGACHQLCARGHCWGPGTQCNCQFRLGQBC 540
QY 541 VESCRVLQGLPREYVNAHCLCPHPCQCPQNGSVTCFGEADOCVCAHYKPPFCVAC 600
Db 541 VESCRVLQGLPREYVNAHCLCPHPCQCPQNGSVTCFGEADOCVCAHYKPPFCVAC 600
QY 601 PSQVKPDLSPYMPKPFDEGACQPCINCTHSCVDLDKQCPAQRASPLTSIVSAVVG 660
Db 601 PSQVKPDLSPYMPKPFDEGACQPCINCTHSCVDLDKQCPAQRASPLTSIVSAVVG 660
QY 661 ILLAVVLGVVFGTLIKRQKIRKTYMRRLQETELVEPLTPSGAMPNQAQMRILKETEL 720
Db 661 ILLAVVLGVVFGTLIKRQKIRKTYMRRLQETELVEPLTPSGAMPNQAQMRILKETEL 720
QY 721 RKVKVLGSGAFGTYYKGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYVMAGVSP 780
Db 721 RKVKVLGSGAFGTYYKGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYVMAGVSP 780
QY 781 YVSRLLIGICLTSTVQLVTQMPYGCILLDHVRENRGLGSDLLNWCQIAGKMSYLEDYR 840
Db 781 YVSRLLIGICLTSTVQLVTQMPYGCILLDHVRENRGLGSDLLNWCQIAGKMSYLEDYR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKIMWALRSILRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKIMWALRSILRRFT 900
QY 901 HQSDVMSYGVVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPICTIDVVMYKCMW 960
Db 901 HQSDVMSYGVVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPICTIDVVMYKCMW 960
QY 961 IDSECRPRRELVSERSMARDPQRFVITQNEIDLGPASPLDSTFYRSLLEDDDMGLVDA 1020
Db 961 IDSECRPRRELVSERSMARDPQRFVITQNEIDLGPASPLDSTFYRSLLEDDDMGLVDA 1020
QY 1021 EYLVPQOQFPFCDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEERAPSLAPSEG 1080
Db 1021 EYLVPQOQFPFCDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEERAPSLAPSEG 1080
QY 1081 AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDDPTVPLPSITDGVAPLTCSPQPEYV 1140

Db 1080 AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDDPTVPLPSITDGVAPLTCSPQPEYV 1139
QY 1141 NOPDVRPDPSPREGPLPAARPAATLER-----AKT.LSPGKXGVVQVFAFGSAVENPE 1195
Db 1140 NOPEVMPQPPPLALEGFLPPSPAGATLERPKT.LSPGKXGVVQVFAFGSAVENPE 1199
QY 1196 YLTPOGGAPOPHPPAFSPAFDNLNLYYWDQDPPERGAPSTFKGTPTAENPEYVLGDVVP 1255
Db 1200 YLAPGRAPQPHPPAFSPAFDNLNLYYWDQDPPERGAPSTFKGTPTAENPEYVLGDVVP 1259
RESULT 3
Q8K3F9 PRELIMINARY; PRT; 1259 AA.
ID Q8K3F9 PRELIMINARY; PRT; 1259 AA.
AC Q8K3F9; PRELIMINARY; PRT; 1259 AA.
DT 01-OCT-2002 (Tremblrel. 22, Created)
DT 01-OCT-2002 (Tremblrel. 22, Last sequence update)
DT 01-MAR-2004 (Tremblrel. 26, Last annotation update)
DE Neu protooncoprotein.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Watson P.A., Kim K., Chen K.-S., Gould M.N.;
RL Submitted (MAR-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY116182; RAMS0093.1; -.
DR HSSP; P06494; 1N8Y.
DR GO; GO:0016020; C:membrane; IEA.
DR GO; GO:0005524; F:ATP binding; IEA.
DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
DR GO; GO:0016740; P:transferase activity; IEA.
DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin_repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00219; TYRK; 1.
DR PROSITE; PS00018; EF_HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00111; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
SQ SEQUENCE 1259 AA; 139101 MW; B724ED5CC3AB953 CRC64;
Query Match 88.1%; Score 5998.5; DB 2; Length 1259;
Best Local Similarity 87.9%; Pred. No. 1.4e-304;
Matches 1104; Conservative 50; Mismatches 101; Indels 1; Gaps 1;
QY 1 MELAAWCRGGLALLPSPGAGTQVCTGDMKLRIPASPTHLDMLRHLYQCGQVQGNL 60
Db 4 MELAAWCRGGLALLPSPGAGTQVCTGDMKLRIPASPTHLDMLRHLYQCGQVQGNL 63
QY 61 ELYLPTNASLFLQDIQEVQGVYLIHNOVQVPLQRLIRVRGTOLFDENYALAVLDNG 120
Db 64 ELYLPTNASLFLQDIQEVQGVYLIHNOVQVPLQRLIRVRGTOLFDENYALAVLDNR 123

Qy 121 DPLNNTTPVT-GASPGGLRELQLSLTEILKGGVLIQRNPOLCYQDTILMKDIFKHNQL 179
Db 124 DPQDNVAASTPGRTEGLRELQLSLTEILKGGVLIQRNPOLCYQDVMWKDVKRNQL 183
Qy 180 ALTLDITNRSBACHPCSPMKSGSCWGESSEDCSLTRTVWCAGGCARCKGRLPTDCCHQ 239
Db 184 APVDIDITNRSBACHPCSPMKSGSCWGESSEDCSLTRTVWCAGGCARCKGRLPTDCCHQ 243
Qy 240 CAAGCTGPKISDCLACLFHNSGICELHCPALVTYNTDTFESMNPGRYTFGASCVTAC 299
Db 244 CAAGCTGPKISDCLACLFHNSGICELHCPALVTYNTDTFESMNPGRYTFGASCVTAC 303
Qy 300 PYNLTSTVSGTLCVPLHNSGICELHCPALVTYNTDTFESMNPGRYTFGASCVTAC 359
Db 304 PYNLTSTVSGTLCVPLHNSGICELHCPALVTYNTDTFESMNPGRYTFGASCVTAC 363
Qy 360 NIOEFACKKIFGSLAFELPESFDGDPASNTAPLOPEQLQVPELLEITGYLISAWPDSL 419
Db 364 NIOEFACKKIFGSLAFELPESFDGDPASNTAPLOPEQLQVPELLEITGYLISAWPDSL 423
Qy 420 PDLSVFQNLQVIRGRILHNGAYSITLQGLGISWLSRLSRLSGLALIHNTLCFVHT 479
Db 424 RDLVSFQNLQVIRGRILHNGAYSITLQGLGISWLSRLSRLSGLALIHNTLCFVHT 483
Qy 480 VPMQDLFRNPHQALLHTANRPEDCEVGEGLACHOLCARGHGWGPTQCVNCSQFLRGQE 539
Db 484 VPMQDLFRNPHQALLHTANRPEDCEVGEGLACHOLCARGHGWGPTQCVNCSQFLRGQE 543
Qy 540 CVEECRVGLPRLYVNRHCLPCHPCQFONGSVTCFGEADOCVACHYKPPFCVAR 599
Db 544 CVEECRVGLPRLYVNRHCLPCHPCQFONGSVTCFGEADOCVACHYKPPFCVAR 603
Qy 600 CPSGVKPDLSYMTWKPEDEGACQPCPINTHSCVDLDDKCPAERASPLTSIVSAV 659
Db 604 CPSGVKPDLSYMTWKPEDEGACQPCPINTHSCVDLDDKCPAERASPLTSIVSAV 663
Qy 660 GILLVVLGVVFGILIKRRQKIRKYTMRLLOTELVEPLTPSGAMPNQAQRILKETE 719
Db 664 GILLVVLGVVFGILIKRRQKIRKYTMRLLOTELVEPLTPSGAMPNQAQRILKETE 723
Qy 720 LRKVKVLGSAFGTYVYGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYMAGVGS 779
Db 724 LRKVKVLGSAFGTYVYGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYMAGVGS 783
Qy 780 PYVRLGICLTSTVQLVTLQMPYGLLDHVRNRLGSLQDLNWCQIAKGSYLEDV 839
Db 784 PYVRLGICLTSTVQLVTLQMPYGLLDHVRNRLGSLQDLNWCQIAKGSYLEDV 843
Qy 840 RLVRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKMWMALESILRRF 899
Db 844 RLVRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKMWMALESILRRF 903
Qy 900 THQSDVWSYGVYVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPTCTTDVYMWK 959
Db 904 THQSDVWSYGVYVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPTCTTDVYMWK 963
Qy 960 MIDSECPRELVESESRWARDQRFVJQNEIDLGPASPLDSTFYXSLLEDMDGLD 1019
Db 964 MIDSECPRELVESESRWARDQRFVJQNEIDLGPASPLDSTFYXSLLEDMDGLD 1023
Qy 1020 ABEYLVPOQGFCCPDPAAGMGVHRRHSSTRSGGDLTLGLEPSEEBAPRSLAPSE 1079
Db 1024 ABEYLVPOQGFCCPDPAAGMGVHRRHSSTRSGGDLTLGLEPSEEBAPRSLAPSE 1083
Qy 1080 GAGSDVFDGLGMAAGLQSLPHTDPSPIQRYSEDPTVLPSTDTGYVAPLFCSPQPEY 1139
Db 1084 GAGSDVFDGLGMAAGLQSLPHTDPSPIQRYSEDPTVLPSTDTGYVAPLFCSPQPEY 1143
Qy 1140 VNQPDVREPSPREGPLPAARPAATLERAKTSLPGKNGVVKDVFAGGAVENPEVLT 1199
Db 1144 VNQPDVREPSPREGPLPAARPAATLERAKTSLPGKNGVVKDVFAGGAVENPEVLT 1203
Qy 1200 QGGAAPQHPHPPAFSPAFDNLVYWDQPPPERGAPPSTFKGTPTAENPEYLGLDV 1255

Db 1204 REGTASPHSPAFSPAFDNLVYWDQNSBQGPSPSFEFTPTAENPEYLGLDV 1259
RESULT 4
Q6P732 PRELIMINARY; PRT; 1259 AA.
AC Q6P732
DT 05-JUL-2004 (T-EMBLrel. 27, Created)
DT 05-JUL-2004 (T-EMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (T-EMBLrel. 27, Last annotation update)
DE V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.
GN Name=Erbb2;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Prostate;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Hatschek S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haiech P.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Ustin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McSwain P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Bailey J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
Krzyszynski M.I., Skalek U., Smailus D.E., Schnerch A., Schein J.E.,
Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
and mouse cDNA sequences";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Prostate;
RA Strausberg R.;
RL Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.
EMBL; BC061863; AAH61863.1; -;
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Growth factor.
DR InterPro; IPR011009; Kinase-like.
DR InterPro; IPR000719; Prot kinase.
DR InterPro; IPR002290; Ser Thr kinase.
DR InterPro; IPR001245; Tyr kinase.
DR InterPro; IPR008266; Tyr kinase.
DR InterPro; IPR004039; YAP motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Recep L domain; 2.
DR Pfam; PF02757; YAP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00220; S_TK; 1.
DR SMART; SM00219; TyK; 1.
DR PROSITE; PS00018; EF HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS00011; PROTEIN KINASE DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
KW ATP-binding; Kinase; Transferase.
SQ SEQUENCE 1259 AA; 139071 MW; 10746819C22BB802 CRC64;

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
Best Local Similarity 87.8%; Pred. No. 2.2e-304;
Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1020 ABEYLVPQGFCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEBAPRSLAPSE 1079
DB 1024 ABEYLVPQGFCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEBAPRSLAPSE 1083
QY 1080 GAGSDVDFDGLMGAAGKLSLTHPSPLQRYSEDPTVPLPSTGYVAPLTCSPQPEY 1139
DB 1084 GAGSDVDFDGLMGAAGKLSLTHPSPLQRYSEDPTVPLPSTGYVAPLTCSPQPEY 1143
QY 1140 VNQDVPDPQPPSPREGPLPAAPAGATLAKTLSPGKNGVGVKDFAGGAVENPEYLT 1199
DB 1144 VNQDVPDPQPPSPREGPLPAAPAGATLAKTLSPGKNGVGVKDFAGGAVENPEYLT 1203
QY 1200 QGGAAPDPHPPAPSPAFDNLVYWDQPPERGAPESTFKGPTTAENPEYLGDPV 1255
DB 1204 REGTASPPHPPAPSPAFDNLVYWDQPPERGAPESTFKGPTTAENPEYLGDPV 1259

RESULT 5
AAH61863 PRELIMINARY; PRT; 1259 AA.
AC AAH61863;
DT 02-MAR-2004 (Tremblrel. 27, Created)
DT 02-MAR-2004 (Tremblrel. 27, Last sequence update)
DT 02-MAR-2004 (Tremblrel. 27, Last annotation update)
DE V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
RX [1]
SEQUENCE FROM N.A.
RP TISSUE=Prostate;
RC MEDLINE=23388257; PubMed=12477932;
RA Strausberg R.D., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diachenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Ustin T.B., Toshikiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,
RA Bosak S.A., McKernan K.J., Malek J.A., Gay L.J., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahy J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [2]
SEQUENCE FROM N.A.
RP TISSUE=Prostate;
RC Strausberg R.;
RL Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC061863; AAH61863.1; -;
SQ SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
Best Local Similarity 87.8%; Pred. No. 2.2e-304;
Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMLRHLYQCCVQVGNL 60
DB 4 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMLRHLYQCCVQVGNL 63
QY 61 ELTYLPANASLSFLQDIQEVQGVLLAHNOVRQVPLQRLIRVRGTQQLFEDNYALVDNG 120
DB 64 ELTYVPANASLSFLQDIQEVQGVLLAHNOVRQVPLQRLIRVRGTQQLFEDNYALVDNR 123

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
Best Local Similarity 87.8%; Pred. No. 2.2e-304;
Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMLRHLYQCCVQVGNL 60
DB 4 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMLRHLYQCCVQVGNL 63
QY 61 ELTYLPANASLSFLQDIQEVQGVLLAHNOVRQVPLQRLIRVRGTQQLFEDNYALVDNG 120
DB 64 ELTYVPANASLSFLQDIQEVQGVLLAHNOVRQVPLQRLIRVRGTQQLFEDNYALVDNR 123
QY 121 DPLNNTTPVT-GASPGGLRELQLRSLEILKGVLIQRPOLCYQDTILWKDIFHNKQL 179
DB 124 DPQDNVAASPTGRTPEGLRELQLRSLEILKGVLIQRPOLCYQDMVLVKDVFRRKNQL 183
QY 180 ALTLIDTNRSRACHPCSPCKSGSRWGESSEDCOSLTRVVCAGGACRCKGLPTCCHEQ 239
DB 184 APVDIDTNRSRACHPCSPCKSGSRWGESSEDCOSLTRVVCAGGACRCKGLPTCCHEQ 243
QY 240 CAAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMNPPEGRTYFGASCVTAC 299
DB 244 CAAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMNPPEGRTYFGASCVTTC 303
QY 300 PYNLSTVGSCTLVCPLNHNOVTAEDGTQRCCKSKPCARVCYGLGMHLEVRVATSA 359
DB 304 PYNLSTVGSCTLVCPLNHNOVTAEDGTQRCCKSKPCARVCYGLGMHLEVRVATSD 363
QY 360 NIOEFAGCKIFGSLAFLESFGDPSANTAPLOPELOVFEETLEITGVLYISAWPDSL 419
DB 364 NVQEFAGCKIFGSLAFLESFGDPSANTAPLOPELOVFEETLEITGVLYISAWPDSL 423
QY 420 PDLVSFONLQVIRGRIIHNAGYSILTLQGLISGLSLRSLRSLRSLRSLRSLRSLRSLR 479
DB 424 RDLVSFONLQVIRGRIIHNAGYSILTLQGLISGLSLRSLRSLRSLRSLRSLRSLRSLR 483
QY 480 VPMDQLFRNPHQALLHTANRPEDECEVGEGLACHQLCARHCWGPQTQVNCQSFIRGOE 539
DB 484 VPMDQLFRNPHQALLHTANRPEDECEVGEGLACHQLCARHCWGPQTQVNCQSFIRGOE 543
QY 540 CVEECRVGLPREYVNAHCLPCHPECPQNGSVTCFGEADQVACAHYKDPFPCVAR 599
DB 544 CVEECRVGLPREYVNAHCLPCHPECPQNGSVTCFGEADQVACAHYKDPFPCVAR 603
QY 600 CPSEGVKPDLSYMPKPFDEEGACQPCPINCTHSCVDLDDKGCPCAPORASPLTSIVAVV 659
DB 604 CPSEGVKPDLSYMPKPFDEEGACQPCPINCTHSCVDLDDKGCPCAPORASPLTSIVAVV 663
QY 660 GILLVVLGVVFGILLIKRQKIRKYTWRRLLQETELVEPLTPSGAMPNQAQRRILKETE 719
DB 664 GILLVVLGVVFGILLIKRQKIRKYTWRRLLQETELVEPLTPSGAMPNQAQRRILKETE 723
QY 720 LRKVKVLGSGAGFYVYGIWIPDGENVKIPVAIKVLRNTSPKANKELDEAYVMAGVGS 779
DB 724 LRKVKVLGSGAGFYVYGIWIPDGENVKIPVAIKVLRNTSPKANKELDEAYVMAGVGS 783
QY 780 PYVSRLLGICLTSTVQLVTLQMPYGCILLDHVRENRLGSDLLNWCQIAGKMSYLEDV 839
DB 784 PYVSRLLGICLTSTVQLVTLQMPYGCILLDHVRENRLGSDLLNWCQIAGKMSYLEDV 843
QY 840 RLVRDLAARNVVKSPNHVKITDFGLARLLDIDETVHADGGKVPKKNWALSILRRRF 899
DB 844 RLVRDLAARNVVKSPNHVKITDFGLARLLDIDETVHADGGKVPKKNWALSILRRRF 903
QY 900 THQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYIMVKCW 959
DB 904 THQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYIMVKCW 963
QY 960 MIDSECRPRFRELVSFSEFMRDQRFVVIQNEIDLPASPLDSTFYRSLLEDDEDDMGDLVD 1019
DB 964 MIDSECRPRFRELVSFSEFMRDQRFVVIQNEIDLPASPLDSTFYRSLLEDDEDDMGDLVD 1023

Qy	121	DPLNNTTPTVT-GASPGGLREIQLRLSRLTEILKGGVLIQRNPQLCYODTILMKDIFHKNQOL	179
Db	124	DPQDNVAASTPGRTEPEGLREIQLRLSRLTEILKGGVLIQRNPQLCYQDMVLKDVFRKNQOL	183
Qy	180	ALTLLIDNRSRACHPCSPMKGSRCWGSESSDQSLTRTVCAGGCARCKGPIPTDCCHEQ	239
Db	184	APVIDIDNRSRACPPCAPKDNHCWGSESDQCILLTGTICTSGCARCKGRLPTDCCHEQ	243
Qy	240	CAAGCTGPKHSDCLACLHFNHSGICELCPALVYNTIDTFESMPNPEGRYTFGASCVTAC	299
Db	244	CAAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTIDTFESMNPPEGRYTFGASCVTTC	303
Qy	300	PYNYLSTDVSGCTLVCPILHNOEVTABDQTORCEKSKPCARVCYGLGMHEHLREVRVATSA	359
Db	304	PYNYLSTEVGSCCTLVCPNNOEVTABDQTORCEKSKPCARVCYGLGMHEHLRGARAITSD	363
Qy	360	NIQBFAGCKKIFGSLAPLPESGFDGPPASNTAPLOPEQLQVFETLEEITGYLIYSANPDSL	419
Db	364	NVQBFDCCKKIFGSLAPLPESGFDGPPSGIAPLPEQLQVFETLEEITGYLIYSANPDSL	423
Qy	420	PDLVSFQNLQVIRGRILHNGAYSLLTLOGLGTSWLGRLSRLRELGSGLAIHNTHLCFVHT	479
Db	424	RDLVSFQNLRIIRGRILHDGAYSLTLOGLGTHSGLSRLRELGSGLAIHRNAHLCFVHT	483
Qy	480	VPWDLFRNPHQALLHTANRDEBECVGBGLACHOLCARGHCWGPEPTQVCNCSOFLRGQE	539
Db	484	VPWDLFRNPHQALLHSNRPEDCGLEGLVCNSLCAHGHCWGPGPTQVCNCSHFLRGQE	543
Qy	540	CVBECRLVGLPREVYNARHCLPCHPECOPONGSVTCFGRPADOVCACAHYKDPFCVAR	599
Db	544	CVBECRVWGLPREYVSDKRLCPCHPECOPQNSSETCFGSRADQCAACAHYKDSSSCVAR	603
Qy	600	CPSGVKPDLSYMPWKFPDEBEGACQPCPINCTHSCVDLDDKGCFAEQRASPLTISIVSAVV	659
Db	604	CPSGVKPDLSYMPWKFPDEBGIQPCPINCTHSCVDLDDRGCFABEQRASPVTFIIATVV	663
Qy	660	GILLVVLGVVGLILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQOAMRILKETE	719
Db	664	GVLLFLILVVVGLILIKRRRKIRKYTWRRLLQETELVEPLTPSGAMPNQOAMRILKETE	723
Qy	720	LRKVVLGSGAFGVYKGIWTPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMWGVGS	779
Db	724	LRKVVLGSGAFGVYKGIWTPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMWGVGS	783
Qy	780	PYVSRLGICLITSTVQLVTLQMPYGCULLDHVRENKRLGSDLLNCWCQIAKMSYLEDV	839
Db	784	PYVSRLGICLITSTVQLVTLQMPYGCULLDHVREHRLGSDLLNCWCQIAKMSYLEDV	843
Qy	840	RLVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKWMALESILRRRF	899
Db	844	RLVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKWMALESILRRRF	903
Qy	900	THOSDVWSYGVYTWELMTFGAKPYDGIIPARBIPOLLEKGERLPOPPITCTIDVYMWKWCW	959
Db	904	THOSDVWSYGVYTWELMTFGAKPYDGIIPARBIPOLLEKGERLPOPPITCTIDVYMWKWCW	963
Qy	960	MIDSECRPRELVSFESRWARDQRFVVIQNEIDLGPASPLDSTFYFSLLEDDDMGDLVD	1019
Db	964	MIDSECRPRELVSFESRWARDQRFVVIQNEIDLGFSSPMDSTFYFSLLEDDDMGDLVD	1023
Qy	1020	ABEYLVPOQGFCCPDPAFGAGMVHRRHSSTRSGGGDLTLGLEPSEEEAPRSLAPSE	1079
Db	1024	ABEYLVPOQGFSSPDPTPGTGSTAHRRHSSTRSGGGELTLGLEPSEEGPPRSLAPSE	1083
Qy	1080	GAGSDVFDGLGMAAGLQSLPHTHDSPLQRYSEDPTVPLPSTDTGVYAPLTCSPQPEY	1139
Db	1084	GAGSDVFDGLAMGVTKLQSLSPHDLSPLQRYSEDPTLPLPPTDGVYAPLACSPQPEY	1143
Qy	1140	VNOQDVBPQPPSPREGPLPAARPAAGATLBRAKTILPGKNGVVKDVFAGGAVENPEYLT	1199
Db	1144	VNOSEVQPPPLPTEGPELPPVPRPAGATLERKTLUSPGKNGVVKDVFAGGAVENPEYLV	1203
Qy	1200	QGGAAAPQHPHPPAFSPAFNDLYYWDQDPPBRGAPPSTFKGTPTTAENPEYILGLDVPV	1255

1204 REGTASPPHSPAFSPAFNLYYQNSSEQPPSPNFGPTTAENPEYILGLDVPV 1255

RESULT 6

ERBB2_RAT

ID_ERBB2_RAT STANDARD; PRT; 1257 AA.

AC P06494;

DT 01-JAN-1988 (Rel. 06, Created)

DT 15-DEC-1998 (Rel. 37, Last sequence update)

DT 01-OCT-2004 (Rel. 45, Last annotation update)

DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)

DE (p185erbB2) (NSU proto-oncogene) (C-erbB-2) (Epidermal growth factor receptor-related protein).

DE Name=ErbB2; Synonyms=Neu;

GN Rattus norvegicus (Rat).

OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus

OX NCBI_TaxID=10116;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE=Neuroblastoma;

RX MEDLINE=86118662; PubMed=3945311;

RA Bargmann C.I., Hung M.-C., Weinberg R.A.;

RT "The neu oncogene encodes an epidermal growth factor receptor-related protein.";

RL Nature 319:226-230(1986).

RN [2]

RP SEQUENCE OF 852-905 FROM N.A.

RC TISSUE=Sciatic nerve;

RX MEDLINE=91222560; PubMed=2025425;

RA Lai C., Lemke G.;

RT "An extended family of protein-tyrosine kinase genes differentially expressed in the vertebrate nervous system.";

RL Neuron 6:691-704(1991).

RN [3]

RP STRUCTURE BY NMR OF 650-668

RC MEDLINE=92155181; PubMed=1346763;

RA Gullick W.J., Bottomley A.C., Lotts F.J., Doak D.G., Mulvey D., Newman R., Crumpton M.J., Sternberg M.J.E., Campbell I.D.;

RT "Three dimensional structure of the transmembrane region of the proto-oncogenic and oncogenic forms of the neu protein.";

RL EMBO J. 11:43-48(1992).

CC -I- FUNCTION: Essential component of a neuroguin-receptor complex, although neuroguins do not interact with it alone. GP30 is a potential ligand for this receptor. Not activated by EGF, TGF-alpha and amphiregulin.

CC -I- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein tyrosine phosphate.

CC -I- SUBUNIT: Heterodimer with each of the other ERBB receptors. The constitutively activated oncogenic variant forms a homodimer. Interacts with PKCAPP (By similarity).

CC -I- SUBCELLULAR LOCATION: Type I membrane protein.

CC -I- PTM: Ligand-binding increases phosphorylation on tyrosine residues (By similarity).

CC -I- SIMILARITY: Belongs to the EGF receptor family.

CC

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CC

EMBL; X03362; CAA27059.1; ALT_INIT.

DR PIR; A24562; TVRTNU.

DR PDB; 1IIJ; NMR; A=647-681.

DR PDB; 1N8Y; X-ray; C=23-631.

DR RGD; 2561; Erbb2.

DR InterPro; IPR000494; EGFR L.

DR InterPro; IPR006211; Furin-like.

DR InterPro; IPR006212; Furin repeat.

DR


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Db      1141 YVQSEVQPPPLTFEGELPPVPAGATLSPKNGVVDVFAFGAVENPEYL 1200
QY      1199 POGAAQPPPPPPAFNLYYWDODPPERGAPPSTFKTPTAENPEYLGLDV 1255
Db      1201 PREGTASPPHPSPAFNLYYWDQNSSEQGGPPSPNFEGTPTAENPEYLG 1257

RESULT 7
ERB2_MESAU
ID_ERB2_MESAU STANDARD; PRT: 1254 AA.
AC Q0553;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2).
GN Name=ERB2; Synonyms=NEU;
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Nerve;
RX MEDLINE=94193007; Pubmed=7908275;
RA Nakamura T.; Ushijima T.; Ishizaka Y., Nagao M., Arai M., Yamazaki Y.,
RA Ichikawa T.;
RT "Cloning and activation of the Syrian hamster neu proto-oncogene.";
RL Gene 140:251-255(1994).
CC -1- FUNCTION: Essential component of a neurotrophin-receptor complex,
CC although neurotrophins do not interact with it alone. gp130 is a
CC potential ligand for this receptor. Not activated by EGF, TGF-
CC alpha and amphiregulin (By similarity).
CC -1- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
CC tyrosine phosphate.
CC -1- SUBUNIT: Heterodimer with each of the other ERBB receptors
CC (Potential). Interacts with PRKCA/BP (By similarity).
CC -1- SUBCELLULAR LOCATION: Type I membrane protein.
CC -1- PTM: Ligand-binding increases phosphorylation on tyrosine
CC residues.
CC -1- SIMILARITY: Belongs to the EGF receptor family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (see http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC
CC ENBL; D16295; BAA03801.1; -.
CC PIR; I48161; I48161.
CC HSP; P06494; IN8Y.
CC InterPro: IPR000494; EGFR_L.
CC InterPro: IPR006211; Furin-like.
CC InterPro: IPR006212; Furin repeat.
CC InterPro: IPR009030; Grow_fac_recept.
CC InterPro: IPR011009; Kinase like.
CC InterPro: IPR000719; Prot kinase.
CC InterPro: IPR001245; Tyr_kinase.
CC InterPro: IPR008266; Tyr_kinase_AS.
CC InterPro: IPR004019; VLP_motif.
CC Pfam; PF00757; Furin-like; 1.
CC Pfam; PF00069; Pkinase; 1.
CC Pfam; PF01030; Recep_L_domain; 2.
CC Pfam; PF02757; YLP; 2.
CC PRINTS; PR00109; TYRKINASE.
CC ProDom; PD000001; Prot_kinase; 1.
CC SMART; SM00261; FU; 4.
CC SMART; SM00219; TyKc; 1.
CC PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

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DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Disease mutation; Glycoprotein; Multigene family;
KW Phosphorylation; Proto-oncogene; Receptor; Signal; Transferase;
KW Transmembrane; Tyrosine-protein kinase.
FT SIGNAL 1 21 Potential.
FT CHAIN 22 1254 Receptor protein-tyrosine kinase erbB-2.
FT DOMAIN 22 652 Extracellular (Potential).
FT TRANSMEM 653 675 Potential.
FT DOMAIN 676 1254 Cytoplasmic (Potential).
FT DOMAIN 158 368 Cys-rich.
FT DOMAIN 472 644 Cys-rich.
FT DOMAIN 720 987 Protein kinase.
FT NP_BIND 726 734 ATP (By similarity).
FT BINDING 753 753 ATP (By similarity).
FT ACT_SITE 845 845 By similarity.
FT DISULFID 195 204 By similarity.
FT DISULFID 199 212 By similarity.
FT DISULFID 236 244 By similarity.
FT DISULFID 240 252 By similarity.
FT DISULFID 255 264 By similarity.
FT DISULFID 268 295 By similarity.
FT DISULFID 299 311 By similarity.
FT DISULFID 315 331 By similarity.
FT DISULFID 334 338 By similarity.
FT DISULFID 511 520 By similarity.
FT DISULFID 515 528 By similarity.
FT DISULFID 531 540 By similarity.
FT DISULFID 544 560 By similarity.
FT DISULFID 563 576 By similarity.
FT DISULFID 567 584 By similarity.
FT DISULFID 587 596 By similarity.
FT DISULFID 600 623 By similarity.
FT DISULFID 626 634 By similarity.
FT DISULFID 630 642 By similarity.
FT MOD_RES 1139 1139 Phosphotyrosine (by autocatalysis) (By similarity).
FT MOD_RES 1247 1247 Phosphotyrosine (by autocatalysis) (By similarity).
FT CARBOHYD 68 68 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 125 125 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 187 187 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 259 259 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 530 530 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 571 571 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 629 629 N-linked (GlcNAc...) (Potential).
FT VARIANT 658 658 V -> E (in oncogenic NEU).
FT VARIANT 659 659 V -> E (in oncogenic NEU).
SQ SEQUENCE 1254 AA; 138252 MW; 974C3791C21F2BE1 CRC64;

Query Match 87.9%; Score 5984.5; DB 1; Length 1254;
Best Local Similarity 87.8%; Pred. No. 7.3e-304;
Matches 1099; Conservative 58; Mismatches 97; Indels 1; Gaps 1;

QY 1 MELAAACRWGLLALLPPGAASQTCTGTDMLRLPASPEHDLMLRLHYQGQVQGNL 60
DB 1 MELAAACRWGLLALLPPGAASQTCTGTDMLRLPASPEHDLMLRLHYQGQVQGNL 60
QY 61 ELTYLPNATSLSLFLQDIQEVQGYVLIHNRQVPLQRLIRIVRGTLQFEDNYALAVLDNG 120
DB 61 ELTYLPNATSLSLFLQDIQEVQGYVLIHNRQVPLQRLIRIVRGTLQFEDNYALAVLDNR 120
QY 121 DPLNNTPTVTGASPGGLRELQLRLSLTEILKGGVLIQNRNPOLCYQDTILWKDIFHKNNQLA 180
DB 121 DPLNNTPTVTGASPGGLRELQLRLSLTEILKGGVLIQNRNPOLCYQDTILWKDIFHKNNQLA 180
QY 181 LTLIDNTRSRACHPCSPMCKSGRCWSESSEDQSLTRTVCCAGCARCKGPLPTDCCHQC 240
DB 181 PVDIDNTRSRACHPCSPMCKSGRCWSESSEDQSLTRTVCCAGCARCKGPLPTDCCHQC 240
QY 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
DB 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300

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QY 301 YNYLSTDVGSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLREVRVAVTSAN 360
DB 301 YNYLSTEVSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLRGARVAVTSAN 360
QY 361 IQEFAGCKKIFGSLAFPLPSFDGDPASNTAPLOPEQLQVFETLEEITGYLYISAMPDLSL 420
DB 361 IQEFAGCKKIFGSLAFPLPSFDGDPASNTAPLOPEQLQVFETLEEITGYLYISAMPDLSL 420
QY 421 DLSVFONLQVIRGRIIHNGAYSITLQGLISWGLSRLSRELSGGLAIHHNTHLCFVHTV 480
DB 421 DLSVFONLQVIRGRIIHNGAYSITLQGLISWGLSRLSRELSGGLAIHHNTHLCFVHTV 480
QY 481 PWDQLFRNPHQALLHTANPEDECVGEGACHOLCARGHCWGPGTQCVCNCSOFLRGQEC 540
DB 481 PWDQLFRNPHQALLHTANPEDECVGEGACHOLCARGHCWGPGTQCVCNCSOFLRGQEC 540
QY 541 VECRVQLGLPREYVNAHCLPCHPECQPNQSGVTCFGEADQCVACAHYKOPPPFCVAC 600
DB 541 VKECRVWKGLPREYVNGKCLPCHPECQPNQSGVTCFGEADQCTACPHYKDSPPFCVAC 600
QY 601 PSQVKPDLSPMTWKPPDEBAGACQPCPINCSTHSCVDLDDKGCPCAPORASPLTSIVSAVVG 660
DB 601 PSQVKPDLSPMTWKPPDEBAGACQPCPINCSTHSCVDLDDKGCPCAPORASPLTSIVSAVVG 660
QY 661 ILLVVLGVVFGILIKRROQKIRKYTMRLLOQTELVEPLTPSGAMPNOAQMRLKETEL 720
DB 661 ILLVVLGVVFGILIKRROQKIRKYTMRLLOQTELVEPLTPSGAMPNOAQMRLKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGP 780
DB 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGP 780
QY 781 YVSRLLGICLTSVQLVTQMPYGCLLDVRHNRGLSGODLLNWCNQIAKMSYLEDVR 840
DB 781 YVSRLLGICLTSVQLVTQMPYGCLLDVRHNRGLSGODLLNWCNQIAKMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDPLGLARLLDIDETVHADGGKVPKKNWALESLIRRRFT 900
DB 841 LVHRDLAARNVLKSPNHVKITDPLGLARLLDIDETVHADGGKVPKKNWALESLIRRRFT 900
QY 901 HQSDVMSYGVYVWELMTFGAKPYDGPAREIPDLLEKGERLPPOPICTIDVYMWKCM 960
DB 901 HQSDVMSYGVYVWELMTFGAKPYDGPAREIPDLLEKGERLPPOPICTIDVYMWKCM 960
QY 961 IDSECPRRRELVSERMAARDPQRFVITQNEIDLGPASPLDSTFYRSLLEDDDMGLVDA 1020
DB 961 IDSECPRRRELVSERMAARDPQRFVITQNEIDLGPASPLDSTFYRSLLEDDDMGLVDA 1020
QY 1021 EYLVFQQGFPDPAFGAGVWVHRRSSSTRSGGDLTLGLEPSEERAPRSLAPSEG 1080
DB 1021 EYLVFQQGFPDPAFGAGVWVHRRSSSTRSGGDLTLGLEPSEERAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGKLOSLTHDFPSLQRYSEDPTVPLPSETDGVAPLTCSPQPEYV 1140
DB 1081 AGSDVFEGLGMCATKGQPSISPRDLSPQLQRYSEDFTLPLTETDGVAPLACSPQPEYV 1140
QY 1141 NQPDVPRQPPSPREGPLPAARPAAGATLERAKTLPSPKNGVGVKDVAFPGGAVENPEYLTQ 1200
DB 1141 NQPEVPRQPPPLTPPEGLPPVPRPAGATLERPKTLPSPKNGVGVKDVFTFGGAVENPEYLVPR 1200
QY 1201 GGAAPDPPHPPAFSPAFDNLVYWDQPPRGPAPSTFKGTPTAENPEYLGLDVVP 1255
DB 1201 GGSASQPH-PPALCPAFDNLVYWDQPPRGPAPSTFKGTPTAENPEYLGLDVVP 1254

RESULT 8
Q6ZPEO
ID Q6ZPEO PRELIMINARY; PRT; 1305 AA.
AC Q6ZPEO;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
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DE MKIAA3023 protein (Fragment).
GN Name=mkTAA3023;
OS Mus musculus (Mouse);
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Embryonic tail;
RX PubMed=14621295;
RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
RT Saga Y., Nagase T., Ohara O., Koga H.;
RT "Prediction of the coding sequences of mouse homologues of KIAA gene:
RT III. the complete nucleotide sequences of 500 mouse KIAA-homologous
RT cDNAs identified by screening of terminal sequences of cDNA clones
RT randomly sampled from size-fractionated libraries.";
RL DNA Res. 10:167-180(2003).
DR EMBL; AK129487; BAC98297.1; -.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow fac repeat.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot kinase.
DR InterPro; IPR002290; Ser_thr_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Pkinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00220; S_TKc; 1.
DR SMART; SM00219; TyrKc; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00111; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase.
FT NON_TER 1
FT SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;
Query Match 87.7%; Score 5973.5; DB 2; Length 1305;
Best Local Similarity 87.5%; Pred. No. 2.9e-303;
Matches 1099; Conservative 56; Mismatches 100; Indels 1; Gaps 1;
QY 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLKRLPASPETHLDMLRHLYQGQVYVQGNL 60
DB 50 MELAAWCRGFTLLALLSPGAAGTQVCTGTDMLKRLPASPETHLDMLRHLYQGQVYVQGNL 109
QY 61 ELYLPTNASLFLQDIQEVQGVLIHNRVQVPLQRIRIVRGTLQFEDNVALAVLDNG 120
DB 110 ELYLPPANASLFLQDIQEVQGVLIHNRVQVPLQRIRIVRGTLQFEDNVALAVLDNR 169
QY 121 DPLNN-TTPTVTGASPGGLRELQLRSITELKGGVLIQRNPOLCYQDTILWKDIFHKNNQL 179
DB 170 DPLDNNVTAAAGRTPEGLRELQLRSITELKGGVLIQRNPOLCYQDMVLWKDVLKNNQL 229
QY 180 AULTIDTNRSRACHPCSPCKGSRGWGESSEBCQSILTRTVAGGACRCKGPLPTDCHEQ 239
DB 230 APVDMDTNRSRACPPCAPCTCKDNHCWGESPEDCQILTGITCTSGCARCKGRPLTDCHEQ 289
QY 240 CAAGCTGPKHSDCLACLHNHSGICELHCPALVTYNTDTFESMPNPEGRTYFGASCVTAC 299
DB 290 CAAGCTGPKHSDCLACLHNHSGICELHCPALVTYNTDTFESMLNPEGRTYFGASCVTTC 349
QY 300 PYNLYSTDVGSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLREVRVAVTSAN 359
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QY 780 PYVSRLLGICLTSTVQLTQMPYGCGLDHHVNRGRGLSQDILLNWCQIAKMGSYLEDV 839
DB 830 PYVSRLLGICLTSTVQLTQMPYGCGLDHHVNRGRGLSQDILLNWCQIAKMGSYLEDV 889
QY 840 RLVRDLAARNVLKSPNVKVTDFGLARLLDIDETEVHADGKVPKIKMALESILRRRF 899
DB 890 RLVRDLAARNVLKSPNVKVTDFGLARLLDIDETEVHADGKVPKIKMALESILRRRF 949
QY 900 THQSDVMSYGVTVWELMTFCAPYDGPAREIPDLLEKGERLPQPPICITIDVYIMVWKW 959
DB 950 THQSDVMSYGVTVWELMTFCAPYDGPAREIPDLLEKGERLPQPPICITIDVYIMVWKW 1009
QY 960 MIDSECRPRELVSFERSMARDPQFVVIQNEIDGAPSLDSTFVRSLLDDDDGDLVD 1019
DB 1010 MIDSECRPRELVSFERSMARDPQFVVIQNEIDGAPSLDSTFVRSLLDDDDGDLVD 1069
QY 1020 ABEYLVPOQFFCPDPAAGAGMVHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSE 1079
DB 1070 ABEYLVPOQFFCPDPAAGAGMVHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSE 1129
QY 1080 GAGSDVFDGDLGMAAGLQSLTHDPSPLQRYSEDPTVPLPSETGYVAPLTCSPQPY 1139
DB 1130 GAGSDVFDGDLGMAAGLQSLTHDPSPLQRYSEDPTVPLPSETGYVAPLTCSPQPY 1189
QY 1140 VNQPDVVRPQPPSPREGPLPAARAGATLIERAKTLSPKNGVVKDVFAGGAVENPEYLP 1199
DB 1190 VNQPDVVRPQPPSPREGPLPAARAGATLIERAKTLSPKNGVVKDVFAGGAVENPEYLP 1249
QY 1200 QCGAAPPQPPPPAFSPAFDNLVYWDQDPPRGAAPPSTFKGTPTAENPEYLGDLVVP 1255
DB 1250 RAGTASQPHSPAFSPAFDNLVYWDQDPPRGAAPPSTFKGTPTAENPEYLGDLVVP 1305
RESULT 10
Q8COE7 PRELIMINARY; PRT; 881 AA.
AC Q8COE7; 2003 (TrEMBLrel. 23, Created)
DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Mus musculus 13 days embryo male testis cDNA, RIKEN full-length
DE enriched library, clone:6030449F08 product:v-erb-b2 erythroblastic
DE leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene
DE homolog (avian), full insert sequence. (Fragment).
GN Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=9279253; PubMed=10349636;
RA Carninci P., Hayashizaki Y.;
RT "High-efficiency full-length cDNA cloning";
RL Meth. Enzymol. 303:19-44(1999).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=21085660; PubMed=11217851;
RA RIKEN FANTOM Consortium;
RT "Functional annotation of a full-length mouse cDNA collection";
RL Nature 409:685-690(2001).
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA The FANTOM Consortium;
RT "Analysis of the mouse transcriptome based on functional annotation of
RL 60,770 full-length cDNAs";
RN Nature 420:563-573(2002).
RN [4]
RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20499374; PubMed=11042159;
RA Carninci P., Shibata Y., Hayatsu M., Sugahara Y., Shibata K., Itoh M.,
RA Konno H., Okazaki Y., Muratsu N., Hayashizaki Y.;
RT "Normalization and subtraction of cap-trapper-selected cDNAs to
RL prepare full-length cDNA libraries for rapid discovery of new genes";
RL Genome Res. 10:1617-1630(2000).
RN [5]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20530913; PubMed=11076861;
RA Shibata K., Itoh M., Aizawa K., Nishida K., Kitsuaki T., Tashiro H., Itoh M.,
RA Sumi N., Ishii Y., Nakamura S., Hazama M., Nishine T., Harada A.,
RA Yamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K.,
RA Fujiwaka S., Inoue K., Togawa Y., Izawa M., Ohara E., Watahiki M.,
RA Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J.,
RA Okazaki Y., Muratsu M., Inoue Y., Kira A., Hayashizaki Y.;
RT "RIKEN integrated sequence analysis (RISA) system-384-format
RL sequencing pipeline with 384 multicapillary sequencer";
RL Genome Res. 10:1757-1771(2000).
RN [6]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,
RA Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,
RA Hayashida K., Hayatsu M., Hiramoto K., Hiraoka T., Hirozane T.,
RA Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
RA Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,
RA Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,
RA Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,
RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,
RA Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
RA Tagawa A., Takahashi F., Takaku-Akai H., Tanaka T., Tanaka T.,
RA Tomaru A., Toya T., Yasunishi A., Muratsu M., Hayashizaki Y.;
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AK031542; BAC27442.1; -.
DR HSSP; P06494; 1N8Y.
DR MGD; MGI:95410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Growth factor receptor.
DR InterPro; IPR011009; Kinase-like.
DR InterPro; IPR000719; Protein kinase.
DR InterPro; IPR01245; Tyrosine kinase.
DR InterPro; IPR008266; Tyrosine kinase_AS.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Receptor domain; 1.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Protein kinase; 1.
DR SMART; SM00261; FU; 2.
DR SMART; SM00219; Tyrc; 1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS00011; PROTEIN KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
FT NON_TER 1 1
SQ SEQUENCE 881 AA; 97500 MW; 5D5042BE9F80836 CRC64;

Query Match 61.8%; Score 4207; DB 2; Length 881;
Best Local Similarity 88.1%; Pred. No. 2.8e-211;
Matches 776; Conservative 40; Mismatches 65; Indels 0; Gaps 0;
QY 375 AFLPESFDGDPASNTAPLOPEQLQVPEETLEETIGLYISAWPDSLPDLVFNQVIRGR 434
DB 1 AFLPESFDGDPNSGVAPLAPLPEHLQVPEETLEETIGLYISAWPESFDLSVFNQVIRGR 60
QY 435 ILHNGAYSLTLQGLGISWLGSLRLGSLALIHHTHLCPVHTVPWDLFRNPHQALL 494

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Db 61 ILHDGAYSLTQGIHSLGRLSRELDGLALHNRTHLCFVNTVPWDQLFRPHOALL 120
Qy 495 HTANRPDECEGEGACHQCHGCHGPGTQCNCVSQFLRGQECVEECRVQLGPREY 554
Db 121 HSGNRPBEACGLEGLVNSLCARHCHGPGTQCNCVSQFLRGQECVEECRVWKGPREY 180
Qy 555 VNARHCLPCHPECOQNGSVTCFGEADQCACAHYKDPFPCVACRCPGKPDLSYMPIW 614
Db 181 VRGKHCLPCHPECOQNSSETCYGSEADQCEACAHYKDSQVACRCPGKPDLSYMPIW 240
Qy 615 KFPDEBACQPCPINCCHSCHVDLDDKCPAEORASPLTSIVAVGILLVVVLGVFGIL 674
Db 241 KYPDEEGICOPCINCHSCHVDLDERGCPAEORASPTFIATVVGVLFLIIIVVVGIL 300
Qy 675 IKRRQKIRKYTMRLLOETELVPLTPSGAMPNQAQMRILKTELAKVKVLGSGAGTV 734
Db 301 IKRRQKIRKYTMRLLOETELVPLTPSGAVPNQAQMRILKTELAKVKVLGSGAGTV 360
Qy 735 YKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTV 794
Db 361 YKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTV 420
Qy 795 QLVTLMPYGLLDHVRNCRIGSQDLLNWKQIAKMSYLEVDVRLVHRDLAARNVLVK 854
Db 421 QLVTLMPYGLLDHVRNCRIGSQDLLNWKQIAKMSYLEVDVRLVHRDLAARNVLVK 480
Qy 855 SPNHVKLTDLCLARLLDIDETEHADGKVPKIKMALESILRRRFTHQSDVWSYGVTVWE 914
Db 481 SPNHVKINDFLARLLDIDETEHADGKVPKIKMALESILRRRFTHQSDVWSYGVTVWE 540
Qy 915 LMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITIDVYIMVKCWMIDSECRPRFRLVS 974
Db 541 LMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITIDVYIMVKCWMIDSECRPRFRLVS 600
Qy 975 EFSMARDPQRFVVIQNEIDGPASPLDSTFYRSLEDDDMGLVDAAEYLVPQGGFFCPD 1034
Db 601 EFSMARDPQRFVVIQNEIDGPASPLDSTFYRSLEDDDMGLVDAAEYLVPQGGFFSPD 660
Qy 1035 PAPGAGMVRHRRSSSTRSGGDLTLGLPSEEARPSPLASEGAGSDVDFGDLGMA 1094
Db 661 PALGTGTARRHRRSSARSGGSLTLGLPSEEEPRPSPLASEGAGSDVDFGDLAVG 720
Qy 1095 AKGLQSLTHDPSPLOQYSEDPTVPLPSETDGYVAPLTCGPQEVYVQPDVROPSPRE 1154
Db 721 TKGLQSLSPHDLSPLOQYSEDPTLPLPETDGYVAPLACGPQEVYVQPEVRFQSPUTPE 780
Qy 1155 GPUPAARPAAGATLERAKTLGPKNGVVKVDFAFGAVENPEYLTPOGGAAPQHPHPPAFS 1214
Db 781 GPPPIRPAAGATLERPKTLSPGKNGVVKVDFAFGAVENPEYLAAPRAGTASQHPHPPAFS 840
Qy 1215 PAFDNLVYWDQDPPERCAPSTFKGTPTAENPEYILGLDVPV 1255
Db 841 PAFDNLVYWDQNSSEQPPSPSTFEGTPTAENPEYILGLDVPV 881
```

RESULT 11

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Q80Y89 PRELIMINARY; PRT; 711 AA.
AC Q80Y89;
DT 01-JUN-2003 (TrEMBLrel. 24, Created)
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Erbb2 protein.
GN Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxId=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RX MEDLINE=22388257; PubMed=12477932;
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RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Scapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Udell T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McGowan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahney J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butlerfield Y.S.,
RA Krzywinski M.I., Skalka U., Smailus D.E., Schnerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences."
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (FEB-2003) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (JUN-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC046811; AAH46811.1; -.
DR EMBL; BC053078; AAH53078.1; -.
DR HSSP; P06494; IN8Y.
DR MGD; MGI:195410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR SMART; SM00261; FU; 4.
SQ SEQUENCE 711 AA; 78707 MW; 582B188EB0E71318 CRC64;
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Query Match 47.8%; Score 3255.5; DB 2; Length 711;
Best Local Similarity 84.4%; Pred. No. 9.8e-162;
Matches 588; Conservative 41; Mismatches 67; Indels 1; Gaps 1;

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Qy 1 MELAAALCRWGLLALLPPGNAASTQVCTGTDMLRLPASPTHLDMLRLHYQGCVVQGNL 60
Db 1 MELAAWCRWGLLALLSPGAAGTQVCTGTDMLRLPASPTHLDMLRLHYQGCVVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIOEVQGVYVLAHNOVROVPLQRLIRVGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIOEVQGVYVLAHNRKVPQRLIRVGTQLFEDNYALAVLDNR 120
Qy 121 DPLNN-TTPVTGASPGGLRELQRLSLTEILKGGVLIQRNPQLCYQDTILWKDIFPKNNQL 179
Db 121 DPLDNTTAAPGRTPEGLRELQRLSLTEILKGGVLIQRNPQLCYQDMVLWKDVLKNNQL 180
Qy 180 ALTLIDTNRSRACHPCSPCKGRCWGESSEDCQSLTRTVACGACRCKPLPTDCCHEQ 239
Db 181 APVMDTNRSRACPPCAPTKDNHCWGESPEDCQILTGTICTSCARCKRLPTDCCHEQ 240
Qy 240 CAAGCTGPKHSDCLACILFNHSGICELHCPALVTYNTDTESPNPEGRYTFGASCVTAC 299
Db 241 CAAGCTGPKHSDCLACILFNHSGICELHCPALTYNTDTESPNPEGRYTFGASCVTTC 300
Qy 300 PYNLSTDVGSCTLVCPLNHNOEVTAEADGTQRCCKSPKPCARVCYGLGMEHLREVAVTSA 359
Db 301 PYNLSTEVGSCTLVCPPPNNQEVTAEDGTQRCCKSPKPCAGVCYGLGMEHLRGARITSD 360
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Db 603 NNTL-VWKYADAGHVCHLCHPNCTYCTGPGLECGCTNGPKIP--STATGMVGLALLLV 659
Qy 665 VVLGWFGIILKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAOMRILKETELRVK 724
Db 660 VALGIG---LFMRRHIVKRTLRRLQERELVEPLTPSGEAPNQAALLRILKETEFKIK 716
Qy 725 VLGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPVSR 784
Db 717 VLGSAGFTVYKGLWIPGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCR 776
Qy 785 LIGCLTSTVQLITQMLPYGCLLDHVRNRLGSDLLNWCQIAGKMSYLEDLVLRVHR 844
Db 777 LIGCLTSTVQLITQMLPFGLLDYVREHKDNIQSQYLLNWCQIAGKMSYLEDLVLRVHR 836
Qy 845 DLARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIKMALESILRRRFTHQS 904
Db 837 DLARNVLKTPQHVKITDFGLAKLGAEBEYHAEKGVPIKMALESILHRIYTHQS 896
Qy 905 WMSGYVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYMINVKCWMIDSE 964
Db 897 WMSGYVTVWELMTFGSKPYDGIPIASEISSILEKGERLPQPPICTIDVYMINVKCWMIDAD 956
Qy 965 CRFRRELVESEFMRMARDPQRFVVIQ-NEDLGPASPLDSTFYRSLDDDDMDGLVDABEY 1023
Db 957 SRPKFRELIIIEFSKWARDPQRYLVIQDERMHLPSPTDSNFYRALMDEEDMDVDVDAEY 1016
Qy 1024 LVPOQGFPCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEEAAPRLAPSEGAGS 1083
Db 1017 LIPOQGF-----SSPSTRPTLSSLSATS 1042
Qy 1084 DVFDGDLGMAAKGLQSLTHDPSPLOQYSDPTVPLPSET--DGYVAPLTCSPQPEYVN 1141
Db 1043 N--NSTVACIDRNLQSCPIKEDSFLOQYSSDPTGALTEDSIDTFL-----PVPEYIN 1094
Qy 1142 QPVDROPSPREGPLPAAPAGATLERAKTILSPKNGVVKVDVFAFGAVENPEYL-TPQ 1200
Db 1095 Q-SVPEKFPAGSVQNVVTHNOLNP-----APSRDPHYQD--PHSTAVGNPEYLTNVQ 1143
Qy 1201 GGAAPQHPHPPAFSPADNLYWDQ-----DP-----PERGAPPSTFKGTAE 1244
Db 1144 -----PTCVNSTFSDPAHWAQKSHQISLDNPDYQDFFFPKAPKNGIFKGS-TAE 1193
Qy 1245 NPEYL 1249
Db 1194 NAEYL 1198

RESULT 14
AAS83109 ID AAS83109 PRELIMINARY; PRT; 1210 AA.
AC AAS83109;
DT 14-APR-2004 (TrEMBLrel. 27, Created)
DT 14-APR-2004 (TrEMBLrel. 27, Last sequence update)
DT 14-APR-2004 (TrEMBLrel. 27, Last annotation update)
DE Epidermal growth factor receptor (Erythroblastic leukemia viral
(v-erb-b) oncogene homolog, avian).
GN EGFR.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Livingston R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,
RA Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,
RA Sherwood J.K., Sherwood A.M., Leithauser B.J., Nickerson D.A.;
RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL: AY588246; AAS83109.1; -.
KW Receptor.
SQ SEQUENCE 1210 AA; 134276 MW; D8A2A50B4EFB6ED2 CRC64;

Query Match 46.5%; Score 3166; DB 2; Length 1210;
Best Local Similarity 49.8%; Pred. No. 8.7e-157;
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Matches 630; Conservative 177; Mismatches 352; Indels 106; Gaps 21;
Qy 11 LLLALLPPGAA--STOVCTCTDMKRLRASPETHDMLRLHYQSCQVQGNLELYLPTN 68
Db 14 LLAALCPASRALBEKKVCOQTSNKLTLQGTFFEDHFLSLQRFNCFVVLGNLEITYVORN 73
Qy 69 ASLSFLQDIOEVGYVLIHNOVRQVPLQRLRIVRGQTLFEDNYVALAVLNGDPLNNTTP 128
Db 74 YDLSFLKTIQEVAGYVLIALTNTVERIPLENLQIRGNMYVENSVALAVLSNYD----- 126
Qy 129 VTGASPEGLBELQIRSLTEILKGVLIQRPQLCYQDTILWKDIFKHQNQLALTLIDTNR 188
Db 127 ---ANKTGLKELPMRLQELIHGAVRFSNNPALCNVESIQWRDIVSDFLSNMSMDFQNH 183
Qy 189 SRACHPCSPCKSGRCSWGESSEDCOSITRTVCAGGCA-RCKGPLPTDCCHEOCAAAGTGP 247
Db 184 LGSCKQCDPCCPNCSWGAGEENCOKLTKIICQQCSGRCRGKSPSCCHNQAAGTGP 243
Qy 248 KHSDECLACLFHNSGICELHCPALVTVNTDTFFESMPNPEGRYTFGASCVTACPNYLSTD 307
Db 244 RESDCLVCRKFRDEATCKDTCPLMLYNPTTYQMDVNPCKYSFGATCVKKCPNYYVTD 303
Qy 308 VGSCTLVCPLHNOEVTABDTQRCCKSKPCARVCYGLGMEHLREVRVAVTSANIQEPAGC 367
Db 304 HGSVCRACGADSSEM-EEDGVKCKCEGPCRVKCVNGIGIGEFKDSLSINATNIKHPKNC 362
Qy 368 KTIFGSLAFLPESFDGDPASNTAPLOEQLOVETLEETITGLYLVISAWPDSLPLSVFQN 427
Db 363 TSISGDLHLIPVAFRGSFTHTPPLDPQELDIUKTVKEITGFLLIQWPNRDTLHAFEN 422
Qy 428 LOVIRGRILHNGAYSILTLQGLISWGLRSLRELGLSGLALIHNTLHCFVHTVFWDOFLR 487
Db 423 LEIIRGETKHQGSFLAVSLNITSLGLRSLKEISDGVIIISGNKLCYANTINWKLFG 482
Qy 488 NPHQALLHTANRDEECVGEGLACHOLCARGHCWGPQGTQVNCQSFQLRGECVEECRVL 547
Db 483 TSCQKTKIISNRGENSKATQGVCHALCSPEGCWGPEDPCVSCRNVSRGECVDCKNLL 542
Qy 548 QGLPREVVARHCLPCHPECOQNGSVTCFGEADQCVACHYKDPFPCVARSVGVKPD 607
Db 543 EGBREFSVENSECIIQCHPECLPQAMNITCTGRGPDNCIQCAHYIDGPHCVKTCFAGVMGE 602
Qy 608 LSYMPIKWPDPDEBGAQPCPCINCTHSCVDLDDGCPAEQASPLTSIVSAVVG---ILLV 664
Db 603 NNTL-VWKYADAGHVCHLCHPNCTYCTGPGLECGCTNGPKIP--STATGMVGLALLLV 659
Qy 665 VVLGWFGIILKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAOMRILKETELRVK 724
Db 660 VALGIG---LFMRRHIVKRTLRRLQERELVEPLTPSGEAPNQAALLRILKETEFKIK 716
Qy 725 VLGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPVSR 784
Db 717 VLGSAGFTVYKGLWIPGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCR 776
Qy 785 LIGCLTSTVQLITQMLPYGCLLDHVRNRLGSDLLNWCQIAGKMSYLEDLVLRVHR 844
Db 777 LIGCLTSTVQLITQMLPFGLLDYVREHKDNIQSQYLLNWCQIAGKMSYLEDLVLRVHR 836
Qy 845 DLARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIKMALESILRRRFTHQS 904
Db 837 DLARNVLKTPQHVKITDFGLAKLGAEBEYHAEKGVPIKMALESILHRIYTHQS 896
Qy 905 WMSGYVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYMINVKCWMIDSE 964
Db 897 WMSGYVTVWELMTFGSKPYDGIPIASEISSILEKGERLPQPPICTIDVYMINVKCWMIDAD 956
Qy 965 CRFRRELVESEFMRMARDPQRFVVIQ-NEDLGPASPLDSTFYRSLDDDDMDGLVDABEY 1023
Db 957 SRPKFRELIIIEFSKWARDPQRYLVIQDERMHLPSPTDSNFYRALMDEEDMDVDVDAEY 1016
Qy 1024 LVPOQGFPCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEEAAPRLAPSEGAGS 1083
Db 1017 LIPOQGF-----SSPSTRPTLSSLSATS 1042
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QY 1084 DVFEDGLGMAAKGLQSLPHDPSPLQRYSEDPTVLPSET--DGTVABLTSPQPEYVN 1141
 Db 1043 N--NSTVACIDRGLQSCPIKEDSFLQRYSSDPTGALTEDSDTFL-----PVPEYIN 1094
 QY 1142 QPDRVPQPSRPGPLPAARAGATLERAKTISPGKNGVVKDVFAGGAVENPEYL-TPQ 1200
 Db 1095 Q-SVPRKPGSVQNPVYHQPLNP-----APSRDPHYQD--PHSTAVGPEYLVNTVQ 1143
 QY 1201 GGAAPQHPHPPAFSPADFNLYWDQ-----DP-----PERGAPPSTFKGPTTAE 1244
 Db 1144 -----PTCVNSTFSDPAHWAQKGSQHSILSDNDPDYQDDPPFKAKEKNGIFKGS-TAE 1193
 QY 1245 NPEYL 1249
 Db 1194 NAEYL 1198

RESULT 15
 ID Q8MIL8 PRELIMINARY; PRT; 1209 AA.
 AC Q8MIL8;
 DT 01-OCT-2002 (Tremblrel. 22, Created)
 DT 01-OCT-2002 (Tremblrel. 22, Last sequence update)
 DT 01-MAR-2004 (Tremblrel. 26, Last annotation update)
 DE Epidermal growth factor receptor.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Kim J.G., Vallet J.L., Nonneman D., Christenson R.K.;
 RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AV117054; AAM77472.1; -;
 DR HSSP; Q9H2C9; 1M17.
 DR GO; GO:0016020; C:membrane; IEA.
 DR GO; GO:0005524; F:ATP binding; IEA.
 DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
 DR GO; GO:0004872; F:receptor activity; IEA.
 DR GO; GO:0016740; F:transferase activity; IEA.
 DR GO; GO:0004658; P:protein amino acid phosphorylation; IEA.
 DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
 DR InterPro; IPR000345; CytC_heme_BS.
 DR InterPro; IPR000494; EGFR_L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin_repeat.
 DR InterPro; IPR009030; Grow_fac_recept.
 DR InterPro; IPR011009; Kinase like.
 DR InterPro; IPR000719; Prot_kinase.
 DR InterPro; IPR001245; Tyr_kinase.
 DR InterPro; IPR008266; Tyr_kinase_AS.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF00069; Pkinase; 1.
 DR Pfam; PF01030; Recep_L_domain; 2.
 DR PRINTS; PR00109; TYRKINASE.
 DR ProDom; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 5.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00190; CYTOCHROME C; UNKNOWN 1.
 DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
 DR PROSITE; PS00011; PROTEIN KINASE DOM; 1.
 DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
 KW ATP-binding; Kinase; Receptor; Tyrosinase; Tyrosine-protein kinase.
 SQ SEQUENCE 1209 AA; 133531 MW; 268E3FB11E36F90F CRC64;

Query Match 46.3%; Score 3153.5; DB 2; Length 1209;
 Best Local Similarity 49.8%; Pred. No. 3.9e-156;
 Matches 631; Conservative 178; Mismatches 350; Indels 107; Gaps 22;

QY 12 LLALL-----PPGAASQVCTGTDMLRLPASPETHLMDLRLHYGCGVQVGNBLTYL 65
 Db 11 LLALLAAHFQASPALBEKVKVCGQTSNKLTLQGTGFEDHFLSLQRMFNNECVLGNLEITYM 70

QY 66 PTNASLSFLQDIOEQVGVYLIHNOVRQVPLQRLIRVIRGTQLFDNYALAVLDNGDPLNN 125
 Db 71 QNSYLSFLTKTIQVAGYVLIALTVEKIPLENLQIRGNVLYENTHALVALSN-----124
 QY 126 TTPVTGASPGGRELQLSLTELKAGGVLIQONPOLCVODTILKWDIFHKNNQLALTLD 185
 Db 125 -----YGANKTGURELPNRNLQILQAVRFSNNPALCHAESIQWRDIIVNSDFLSNMDF 180
 QY 186 TNRSRACHPCSPMCKGSCWGSESSBDOSLITRTVCAGCA-RCKGPLPTDCCHEQCAAC 244
 Db 181 QSQSGCPKCDPGCLNGSCWAGKENCOKLTKVICAQCSGRCGRSPSDCCNCAAC 240
 QY 245 TGPKISDCLACHFNHSGICELHCPALVTYNTDTFESMNPGRTRTFGASCVTACPNYL 304
 Db 241 TGPRESDECLVCRFRDEATKOTCPPLMLNPTTYQMDVNPGLKYSFGATCYKCKPRNV 300
 QY 305 STDVGSCTLVCPHNOEVTAEQCEKCKPCARVCVGLQMEHLREVRVTSANIQEF 364
 Db 301 VTDHGSVCVACSSDSYEV-EEDGVKCKKCDGPGCKVNGIGIGEFKDTLSINATNIK 359
 QY 365 AGCKKIFGSLAFLPESFDGPASNTAPLOEQLOVFTLEETGYLYISAWPDSPLDLSV 424
 Db 360 RNCTSIGDLHLTPVAFRGDSFTRTPPLDPKELDKTKVKEITGFLLIQAWPENRTGLHA 419
 QY 425 FQNLQVIRGRILHNGAYSILTLOGISWGLRSISBELSGSLALIHNTLHLCFVHTVPDQ 484
 Db 420 FENLSIIRGTRKOHGOFSLAVGLDIALSGLSLKESIDGDIVVSGNRNLKANTISWKK 479
 QY 485 LFRNPQALLHTANRPEBCEVGEGLACHOLCARHCWGPGPTQCVCNCSOFLRGQECVEBC 544
 Db 480 LFTASQTKIINNRSEKCKAWGHCNPLCSSEGCWGPEPRDCMSCRNFSRGKCEVC 539
 QY 545 RVLOGLPREYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFCVARGPSGV 604
 Db 540 NVLEGEPRFEVNAECVQCHPECLPOAKNVTGCRGPDSCVCAHYIDGPHCVKTCPCAGI 599
 QY 605 KPDLSVMIWPKFDEEGACQPCPINCTHSCVDLDDKGPACQASPLTSIVASV-VGILL 663
 Db 600 AGENSTL-LWKFADANHVCHLCHPNTCYGCVGLEGCAVDRPKIP-SIATGIVGLGLL 656
 QY 664 VVVLGVVFGILIKRRQKIRKTYMRLLQETELVEPLTPSGAMPNQAKRILKETELRV 723
 Db 657 AVVALGVGLFLRR-HIVRKETLRLQERLEVEPLTPSGEAPNQALLRLKETEFKV 715
 QY 724 KVLGSGAGTGVYKGIWIDGENVKIPVAIKVRENTSPKANKEILDEATVMAGVSGPYVS 783
 Db 716 KVLGSGAGTGVYKGLWIPEGEKVKIPVAIKELREATSPKANKEILDEATVMASVDNPHVC 775
 QY 784 RLIGICLTSTVOLVTQMPYGLLDHVRNRCGLSQDLNNWCMIQAKGMSYLEDVRLVH 843
 Db 776 RLIGICLTSTVOLITQMLPFGCLLDYVREHKNIGSOHLNNWCQVIAKGNVLEDRRLVH 835
 QY 844 RDLAARNVLKSPNVHKITDFGLARLLDIDETEHADGGKVPKWMALSIILRRRTHOS 903
 Db 836 RDLAARNVLKTPQHVKITDFGLAKLGAEEKYHAEGKVPKWLALSIILHRVYTHOS 895
 QY 904 DWYSYGVTVWELMTGAKPYDGIIPAREIPDLLEKEHRLPOPPICTIDVTVMVWKWMIOS 963
 Db 896 DWYSYGVTVWELMTGSKPYDGIIPASEISTVLEKERLPQPPICTIDVTVMVWKWMIIDA 955
 QY 964 ECRPRFELVSEFSEMRWDRPQRFVVIQ-NEDLGPASPLDSTFYRSILDDDDMGDLVDAEE 1022
 Db 956 DSRPFRELIIEFSKWARDPQRYLVIOGDERMHLPSPTDSNYRALMDEDMEDVVDAD 1015
 QY 1023 YLVPQQGFFCPDPAPFAGGMVHHRSSSTRSGGDLTLGLRPSBEEAPRSLAPSEAG 1082
 Db 1016 YLVPQQGFP-HSPATSRTELLSSLSATST-----PAVACVDRNG--1054
 QY 1083 SDVFDGLGMAAKGLQSLPHTDPLQRYSDPTVPLPSET--DGYVAPLTCSPQPEYV 1140
 Db 1055 -----QSYPLKEDSFLQRYSSDPTGALTEDSLDPTFL-----PAPEYV 1092

Qy	1141	NQDVRPQPPSPREGPLPAARPAGATLERAKTILSPGKXGVVVDVFAFGGAVENPEYL-TP	1199
Db	1093	NQ-SVPKRPAGSVQNPVYHNPQPLSA-----APGRDPHYQN--SHSNAVGNPEYLNTP	1141
Qy	1200	QGGRAPOPHPPPAESPAFDNLYYWDQ-----DP-----PERGAPPSTFKGTPTA	1243
Db	1142	R-----PACINGGLDGPAFWAQGTGSHQINLDNPDYQQAFFPKKAKSNGICKG-PAA	1191
Qy	1244	ENPEYL	1249
Db	1192	ENAEYL	1197

Search completed: January 25, 2005, 21:29:14
Job time : 184.563 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:08:29 ; Search time 133.725 Seconds
(without alignments)
3366.641 Million cell updates/sec

Title: US-09-806-703A-4

Perfect score: 6812

Sequence: 1 MELAALCRWGLLLALLPPGA.....TPKGTPTAENPEYLGLDVVP 1255

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:.*
1: Geneseqp1980s:.*
2: Geneseqp1990s:.*
3: Geneseqp2000s:.*
4: Geneseqp2001s:.*
5: Geneseqp2002s:.*
6: Geneseqp2003as:.*
7: Geneseqp2003bs:.*
8: Geneseqp2004s:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6812	100.0	1255	3 AAY92620	Aay92620 Human her
2	6812	100.0	1255	4 AAB60167	Aab60167 HER2 tran
3	6812	100.0	1255	4 AAE12130	Aae12130 Human tyr
4	6812	100.0	1255	5 AAE26349	Aae26349 Human HER
5	6812	100.0	1255	5 AAE26366	Aae26366 Human HER
6	6812	100.0	1255	5 AAU74545	Aau74545 Human HER
7	6812	100.0	1255	6 ABR47447	AbR47447 Breast ca
8	6812	100.0	1255	6 ABP74708	Abp74708 Human HER
9	6812	100.0	1255	6 AAE38390	Aae38390 Human c-e
10	6812	100.0	1255	6 ADA38143	Ada38143 Human erb
11	6812	100.0	1255	7 ADA37255	Ada37255 Human erb
12	6812	100.0	1255	7 ADB67621	Adb67621 Human epi
13	6812	100.0	1255	8 ADH13187	Adh13187 Human mal
14	6812	100.0	1255	8 ADM72831	Adm72831 Human HER
15	6812	100.0	1255	8 ADO20009	Ado20009 Human PRO
16	6806	99.9	1255	2 AAU01111	Aau01111 HER-2/neu
17	6806	99.9	1255	2 AAU92406	Aau92406 Human HER
18	6806	99.9	1255	3 AAY84780	Aay84780 Amino aci
19	6806	99.9	1255	3 AAB21198	Aab21198 Human HER
20	6806	99.9	1255	4 AAG88267	Agg88267 HER2/neu
21	6806	99.9	1255	4 AAB85458	Aab85458 Human HER
22	6806	99.9	1255	5 AAE20479	Aae20479 Human HER
23	6806	99.9	1255	5 AAU77114	Aau77114 Human HER
24	6806	99.9	1255	5 AAM51143	Aam51143 Human HER
25	6806	99.9	1255	5 AAE24067	Aae24067 Human HER

ALIGNMENTS

RESULT 1

AA92620
ID AAY92620 standard; protein; 1255 AA.

XX AC
AA92620;

XX AC
10-AUG-2000 (first entry)

XX AC
Human heregulin 2 (Her2).

XX KW
Heregulin 2; Her2; vaccination; cytotoxic T-lymphocyte immunity;
self-protein; cancer; breast cancer; prostate cancer;
cell-associated peptide antigen; foreign epitope.

XX OS
Homo sapiens.

XX FH	Key	Location/Qualifiers
FT Domain	1..173	/label= N-terminal
FT FT	/note= "mature polypeptide"	
FT Region	5..125	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Region	59..73	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Region	103..117	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Region	149..163	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Domain	174..323	/label= Cysteine_rich_domain
FT Region	210..224	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Region	250..264	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Domain	324..483	/label= Ligand_binding_domain
FT Region	325..339	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	
FT Region	369..383	/label= insertion_region
FT FT	/note= "suitable for foreign epitope insertion"	

FT Region 465..479
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Domain 484..623
FT /label= Cysteine_rich_domain
FT Region 579..593
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Domain 624..654
FT /label= Transmembrane_domain
FT Region 632..652
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Region 653..667
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Domain 655..1010
FT /label= Tyrosine_kinase_domain
FT Region 661..675
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Region 695..709
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Region 710..730
FT /label= insertion region
FT /note= "suitable for foreign epitope insertion"
FT Domain 1011..1235
FT /label= C-terminal_domain
XX
XX WO200020027-A2.
XX
XX
XX PD 13-APR-2000.
XX
XX 05-OCT-1999; 99WO-DK000525.
XX
XX 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX Gautam A, Birk P, Karlsson G;
XX
XX WPI; 2000-349917/30.
XX
XX N-PSDB; AAA09455.
XX
XX Inducing immune responses to weakly immunogenic, tumor associated peptide
XX antigens for the treatment of breast and prostate cancer.
XX
XX Claim 62; Page 193-198; 220pp; English.
XX
XX This is the human heregulin 2 (Her2) sequence. Immunogenic analogues of
XX Her2 can be used in the claimed method as an autovaccine to induce a CTL
XX response. Subdominant CTL epitopes, antibody binding regions and cysteine
XX residues involved in disulfide bonds are preserved in the immunogenized
XX forms. Regions suitable for the insertion of foreign T helper epitopes
XX were identified (see features table). The method is used for inducing
XX immune responses against weakly immunogenic cell-associated peptide
XX antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX simultaneous presentation by antigen producing cells (APCs) of the
XX animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX group derived from the PA and/or at least 1 B-cell group derived from the
XX cell-associated PA; and (2) at least 1 first T helper cell group which is
XX foreign to the animal. Analogues of human PSM, human Her2 and
XX human/murine FGF8b comprising a substantial part of all known and
XX predicted CTL and B-cell epitopes of the respective PA and including at
XX least one foreign T helper epitope are also claimed. The method is used
XX to treat prostate, prostate/breast or breast cancer when the PA is human
XX PSM, FGF8b and Her2, respectively

SQ	Sequence 1255 AA;					
	Query Match	100.0%;	Score 6812;	DB 3;	Length 1255;	
	Best Local Similarity	100.0%;	Pred. No. 0;			
	Matches 1255;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;	
QY	1	MELAAALCRWGLLLALLPPGAAS	TQVCTG	TDMLKRLPAS	PETHLDMLRHL	YQGC
DB	1	MELAAALCRWGLLLALLPPGAAS	TQVCTG	TDMLKRLPAS	PETHLDMLRHL	YQGC
QY	61	ELTYLPTNASLSFLQDIOEQVQYVLI	AHNQVRQVPLQRLRIVRG	TQLFEDNYALAVL	DNG	120
DB	61	ELTYLPTNASLSFLQDIOEQVQYVLI	AHNQVRQVPLQRLRIVRG	TQLFEDNYALAVL	DNG	120
QY	121	DLPLNTTPTVGTASPGGLRELO	RLSLTEILKGGVLI	IQRNPOLCYQD	TILWKDIFHKN	NOLA 180
DB	121	DLPLNTTPTVGTASPGGLRELO	RLSLTEILKGGVLI	IQRNPOLCYQD	TILWKDIFHKN	NOLA 180
QY	181	LTLIDTNRSRACHPCSPMKSGRCW	SESSDCQSLTRTV	CAGGCARCKG	PLPTDCC	HEQC 240
DB	181	LTLIDTNRSRACHPCSPMKSGRCW	SESSDCQSLTRTV	CAGGCARCKG	PLPTDCC	HEQC 240
QY	241	AAAGCTGPKHSDCLACLFHNSGIC	ELHCPALVTYNTD	TFSMPNPEGR	YTFGASCV	TACP 300
DB	241	AAAGCTGPKHSDCLACLFHNSGIC	ELHCPALVTYNTD	TFSMPNPEGR	YTFGASCV	TACP 300
QY	301	YNYLSTDVGSCTLVCPHLNQEV	TAEQDTCRCKSKPCAR	CYCYGLGMEHL	REVRAVTS	AN 360
DB	301	YNYLSTDVGSCTLVCPHLNQEV	TAEQDTCRCKSKPCAR	CYCYGLGMEHL	REVRAVTS	AN 360
QY	361	IOEFAGCKKIFGSLAFIPESFDG	DPASNTAPLQEPOLQV	FETLEITGYL	ISAMPD	SLP 420
DB	361	IOEFAGCKKIFGSLAFIPESFDG	DPASNTAPLQEPOLQV	FETLEITGYL	ISAMPD	SLP 420
QY	421	DLVSFQNLQVIRGRILHNGAYS	TLQGLGISWLG	RLSRILGSGL	ALIHNN	THLCFVHTV 480
DB	421	DLVSFQNLQVIRGRILHNGAYS	TLQGLGISWLG	RLSRILGSGL	ALIHNN	THLCFVHTV 480
QY	481	PWDQLFRPHQALHTANRPEDEC	VCVEGLACHOLCARGH	CWGPGPTQCV	NCVSQFL	RQBC 540
DB	481	PWDQLFRPHQALHTANRPEDEC	VCVEGLACHOLCARGH	CWGPGPTQCV	NCVSQFL	RQBC 540
QY	541	VVEECRVLQGLPREYVNARHCL	PCHPECPQNGSVTCFGE	ADQCACAHY	KDPPFC	VARC 600
DB	541	VVEECRVLQGLPREYVNARHCL	PCHPECPQNGSVTCFGE	ADQCACAHY	KDPPFC	VARC 600
QY	601	PSGVKPDLSYMPIWKFPDEG	ACQPCPNC	THSCVDLDDK	GPQASPL	TSIVSAVVG 660
DB	601	PSGVKPDLSYMPIWKFPDEG	ACQPCPNC	THSCVDLDDK	GPQASPL	TSIVSAVVG 660
QY	661	ILLVVLGVVFGILIKRQOKIR	KYVTMRLLQETELVE	PLTPSGAMP	NQAMRIL	KETEL 720
DB	661	ILLVVLGVVFGILIKRQOKIR	KYVTMRLLQETELVE	PLTPSGAMP	NQAMRIL	KETEL 720
QY	721	RKVKVLGSGAFGVYKGIWIP	DGENVKIPVAIKVLR	ENTSPKANKE	ILDEAY	VMAGVGP 780
DB	721	RKVKVLGSGAFGVYKGIWIP	DGENVKIPVAIKVLR	ENTSPKANKE	ILDEAY	VMAGVGP 780
QY	781	YVSRLLIGICLTSTVQ	LVLTQMPYGLLDHVR	NRRLGSGQDLL	NWCMQI	AGKMSYLEDYR 840
DB	781	YVSRLLIGICLTSTVQ	LVLTQMPYGLLDHVR	NRRLGSGQDLL	NWCMQI	AGKMSYLEDYR 840
QY	841	LVRHDLAARNLVKSPNHVKIT	DFGLARLLDIDETE	HADGKVP	IKWMALES	ILRRRT 900
DB	841	LVRHDLAARNLVKSPNHVKIT	DFGLARLLDIDETE	HADGKVP	IKWMALES	ILRRRT 900
QY	901	HQSDVMSYGVTVWELMT	FGAKPYDGI	PAIREIPDLLE	KGERLPQ	PPICITIDVYMWVKWM 960
DB	901	HQSDVMSYGVTVWELMT	FGAKPYDGI	PAIREIPDLLE	KGERLPQ	PPICITIDVYMWVKWM 960
QY	961	IDSECRPRFRELVS	EFRRARDPQRFV	IQNEDIGPASP	LDSTFYRS	ILEDGDLVDA 1020
DB	961	IDSECRPRFRELVS	EFRRARDPQRFV	IQNEDIGPASP	LDSTFYRS	ILEDGDLVDA 1020

```
Qy 1021 EYLVPQGGFFCPDPAPGAGGVMVHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Db 1021 EYLVPQGGFFCPDPAPGAGGVMVHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Qy 1081 AGSDVFDGDLGMAAGKGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGKGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NQDVRPQPPSPRGPLPAARPAATLERAATLSPGKGVVVKDVFAGGAVENPEYLTPO 1200
Db 1141 NQDVRPQPPSPRGPLPAARPAATLERAATLSPGKGVVVKDVFAGGAVENPEYLTPO 1200
Qy 1201 GGAAPQHPHPPAFPAFDNLYMDQPPPERGAPPSTFKGTPAENPEYLGLDVFP 1255
Db 1201 GGAAPQHPHPPAFPAFDNLYMDQPPPERGAPPSTFKGTPAENPEYLGLDVFP 1255

RESULT 2
AAB60167
ID AAB60167 standard; protein; 1255 AA.
XX
AC AAB60167;
XX
DT 03-APR-2001 (first entry)
XX
DE HER2 transgene plasmid construct encoded protein.
XX
KW Human; HER2; ErbB2 receptor; p185neu; maytansinoid conjugate; cancer;
KW antibody.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200100244-A2.
XX
PD 04-JAN-2001.
XX
PF 23-JUN-2000; 2000WO-US017229.
XX
PR 25-JUN-1999; 99US-0141316P.
PR 16-MAR-2000; 2000US-0189844P.
XX
PA (GETH ) GENENTECH INC.
XX
PI Erickson S, Schwall R;
XX
DR WPI; 2001-061962/07.
DR N-PSDB; AAF24297.
XX
PT Treating tumors, particularly breast cancers, which overexpress an ErbB
PT receptor and does not respond to an anti-ErbB antibody, comprises
PT conjugating the antibody to a maytansinoid.
XX
Example 3; Fig 4; 92pp; English.
XX
CC The present invention provides a method of treating cancer by
CC administering a conjugate of anti-ErbB antibody with a maytansinoid. In
CC particular, the antibody is directed against ErbB2 (also known as HER2
CC and p185neu). The method is particularly useful in the treatment of
CC breast, ovarian, stomach, endometrial, salivary gland, lung, kidney,
CC colon, colorectal, thyroid, pancreatic, prostate and bladder cancers
XX
SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 4; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPFGAASCTGCTDMKLLPASPETHLDMLRHLVGGCQVQGNL 60
Db 1 MELAALCRWGLLALLPFGAASCTGCTDMKLLPASPETHLDMLRHLVGGCQVQGNL 60
```

Db 1141 NQPDVRQPSREGPLPAARPAATLAKTISPGKNGVVKDVFAGGAVENPEYLTPQ 1200
QY 1201 GGAAPQHPHPPASPAFDNLYYWDQDPPERGAPPSTFKGTPPTAENPEYGLDVPV 1255
Db 1201 GGAAPQHPHPPASPAFDNLYYWDQDPPERGAPPSTFKGTPPTAENPEYGLDVPV 1255

RESULT 3

AAE12130
ID AAE12130 standard; protein; 1255 AA.

XX AC AAE12130;

XX DT 18-DEC-2001 (first entry)

XX DE Human tyrosine kinase-type receptor, HER-2.

XX KW Therapeutic compound; major histocompatibility complex; vaccine;

XX KW antigenic peptide; MHC; immunoregulatory; immune response; HER-2;

XX KW adoptive immunotherapy; anti-cancer; breast cancer antigen; APC;

XX KW antigen presenting cell; human; tyrosine kinase-type receptor.

XX OS Homo sapiens.

XX PH Key Location/Qualifiers

XX FT 774..782

XX FT /note= "Antigenic epitope"

XX PN WO200168677-A2.

XX PD 20-SEP-2001.

XX PF 16-MAR-2001; 2001WO-US040328.

XX PR 16-MAR-2000; 2000US-00527487.

XX PA (GENZ) GENZYME CORP.

XX PI Nicolette CA;

XX DR WPI; 2001-616284/71.

XX DR N-PSDB; AAD19731.

XX PT Novel synthetic therapeutic compound for inducing immune response and for

XX PT use in adoptive immunotherapy, has enhanced binding to major

XX PT histocompatibility molecules and enhanced immunoregulatory properties.

XX PS Claim 4; Page 63-67; 69pp; English.

XX CC The invention relates to synthetic therapeutic compounds (antigenic

XX CC peptides) with enhanced binding to major histocompatibility complex (MHC)

XX CC molecules and enhanced immunoregulatory properties relative to their

XX CC natural counterparts. Compounds of the invention are useful for inducing

XX CC an immune response in a subject and for use in adoptive immunotherapy.

XX CC They are useful as components of anti-cancer vaccines and to expand

XX CC immune effector cells that are specific for cancers characterized by

XX CC expression of the breast cancer antigen, HER-2. Polynucleotides that

XX CC encode peptides of the invention are useful as hybridization probes and

XX CC as primers for the detection of genes of gene transcripts that are

XX CC expressed in antigen presenting cells (APCs), to confirm transduction of

XX CC polynucleotides into host cells. The present sequence is human tyrosine

XX CC kinase-type receptor, HER-2. Compounds of the invention are designed

XX CC based on the HER-2 antigenic peptide (774-782)

XX SQ Sequence 1255 AA;

Query Match

Best Local Similarity 100.0%; Score 6812; DB 4; Length 1255;

Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLALLPFGAASTQVCTGTDMLKRLPASPETHLDMLRHLHYQGCVVQGNL 60

Db 1 MELAALCRWGLLALLPFGAASTQVCTGTDMLKRLPASPETHLDMLRHLHYQGCVVQGNL 60
QY 61 ELYTPTNASLFLQDIQEVQGVYLIAHNOVRQVPLQRLIRVGTOLFDENYALAVLDNG 120
Db 61 ELYTPTNASLFLQDIQEVQGVYLIAHNOVRQVPLQRLIRVGTOLFDENYALAVLDNG 120
QY 121 DPLNNTTPTVGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLAKDIFHKKNOLA 180
Db 121 DPLNNTTPTVGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLAKDIFHKKNOLA 180
QY 181 LTLIDTNRSRACHPCSPMCKGSRGCESEDQSLTRITVCAGGCARCKGPLPTDCCHEOC 240
Db 181 LTLIDTNRSRACHPCSPMCKGSRGCESEDQSLTRITVCAGGCARCKGPLPTDCCHEOC 240
QY 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHNOVTAEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHNOVTAEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSAN 360
QY 361 IOEFAGCKKIFGSLAPLPESFDGDPASNTAPLOQVFEETLEETGYLYISAWDLSLP 420
Db 361 IOEFAGCKKIFGSLAPLPESFDGDPASNTAPLOQVFEETLEETGYLYISAWDLSLP 420
QY 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
QY 481 PWDQFRNPHOALLHTANRPEDECVGEGGLACHQLCARGHCWGPGTQCVCNCSQFLRGQC 540
Db 481 PWDQFRNPHOALLHTANRPEDECVGEGGLACHQLCARGHCWGPGTQCVCNCSQFLRGQC 540
QY 541 VEECRVLQGLPREYVNAHCLPCHPECOQNGSVTCFGEADQCVACAHYKDPFPFCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECOQNGSVTCFGEADQCVACAHYKDPFPFCVARC 600
QY 601 PSGVKPDLSYMPIWKPPDEEGACQPCPNCTHSCVDLDDKGCPEAQRASPLTSIVSAVVG 660
Db 601 PSGVKPDLSYMPIWKPPDEEGACQPCPNCTHSCVDLDDKGCPEAQRASPLTSIVSAVVG 660
QY 661 ILLVVLGVVFGILLIKRQOKIRKYMRELLOSTELVEPLTPSGAMPNOAQRILKETEL 720
Db 661 ILLVVLGVVFGILLIKRQOKIRKYMRELLOSTELVEPLTPSGAMPNOAQRILKETEL 720
QY 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVGP 780
QY 781 YVSRLLIGICLTSTVQLVTOLMPYGCLLDHVNRNRGLSGQDLLNWCQIAGKMSYLEDVR 840
Db 781 YVSRLLIGICLTSTVQLVTOLMPYGCLLDHVNRNRGLSGQDLLNWCQIAGKMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWALESIILRRRT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWALESIILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFCAKYDGIIPAREIPDLLEKGERLPOPPICITDVMVMVKWM 960
Db 901 HQSDVMSYGVTVWELMTFCAKYDGIIPAREIPDLLEKGERLPOPPICITDVMVMVKWM 960
QY 961 IDSECRPRPRELVSEFSRWARDPQRFVITQNEDLGPASPLDSTFYRSLLDEDDMGDLVDA 1020
Db 961 IDSECRPRPRELVSEFSRWARDPQRFVITQNEDLGPASPLDSTFYRSLLDEDDMGDLVDA 1020
QY 1021 EBYLVPOQGFPCDPAPGAGGMVHRHRSSTRSGGDLTLGLEPSEERAPSPAPSE 1080
Db 1021 EBYLVPOQGFPCDPAPGAGGMVHRHRSSTRSGGDLTLGLEPSEERAPSPAPSE 1080
QY 1081 AGSDVFDGDLGMAAGKGLQSLFTHDPSPLOQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGKGLQSLFTHDPSPLOQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140

Qy 1141 NQDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVAFGGAVENPEYLTTPQ 1200
 Dd 1141 NQDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVAFGGAVENPEYLTTPQ 1200

Qy 1201 GGAAPQHPHPPAPSPAFDNLYYWDQDPPRGAPSTFKGTPTAENPEYLGIDVPV 1255
 Dd 1201 GGAAPQHPHPPAPSPAFDNLYYWDQDPPRGAPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 4
 AA26349
 ID AAE26349 standard; protein; 1255 AA.
 AC
 XX AAE26349;
 XX
 DT 13-DEC-2002 (first entry)
 XX Human HER-2 protein.
 DE
 XX Transgenic animal; transgenic; mammary gland cell; HER2; tumour; cancer;
 KW therapy; apoptosis; cytostatic; human.
 XX
 OS Homo sapiens.
 XX
 PN US2002035736-A1.
 XX
 XX 21-MAR-2002.
 XX
 PF 16-MAR-2001; 2001US-00811115.
 XX
 PR 16-MAR-2000; 2000US-0189844P.
 XX
 XX (ERIC/) ERICKSON S.
 PA (KING/) KING K.
 PA (SCHW/) SCHWALL R.
 XX
 PI Erickson S, King K, Schwall R;
 XX
 XX WPI; 2002-403759/43.
 DR N-PSDB; AAD43934, AAD43935.
 DR
 XX New transgenic non-human mammal that produces detectable levels of a
 PT native human HER2 protein in its mammary gland cells, useful as tumor
 PT models for testing HER2-directed cancer therapies, and for identifying
 PT anticancer agents.
 XX
 XX Example 2; Page 26-29; 83pp; English.
 PS
 XX The invention relates to a transgenic non-human mammal that produces in
 CC its mammary gland cells detectable levels of a native human HER2 protein
 CC or its fragment. The transgenic animals are useful as tumour models for
 CC testing HER2-directed cancer therapies, and for identifying anticancer
 CC agents. The animals may also be used as source of cells which can be
 CC immortalised in culture, in screening for compounds that have potential
 CC as prophylactic or therapeutic treatments of diseases or disorders
 CC involving expression of HER2. The anti-cancer molecules are useful for
 CC inducing apoptosis or cell death of cancer cells. The present sequence is
 CC human HER-2 protein
 XX
 SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 5; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPPGAASQVCTGTDMKRLPASPETHDMLRHLVQGGQVQGNL 60
 Dd 1 MELAALCRWGLLALLPPGAASQVCTGTDMKRLPASPETHDMLRHLVQGGQVQGNL 60

Qy 61 ELTYLPTNASLSFLQDIQEVQGVYVLIHNNQVRQVPLQRLRVRGTQLFEDNYALAVLDNG 120
 Dd 61 ELTYLPTNASLSFLQDIQEVQGVYVLIHNNQVRQVPLQRLRVRGTQLFEDNYALAVLDNG 120

Qy 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDTTLWKDIFHKNNOLA 180
 Dd 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDTTLWKDIFHKNNOLA 180

Qy 181 LTIIDNRSRACHPCSPMKGSRCSWESSBDCQSLTRTVCCAGCARCKGKPLPTDCCHQC 240
 Dd 181 LTIIDNRSRACHPCSPMKGSRCSWESSBDCQSLTRTVCCAGCARCKGKPLPTDCCHQC 240

Qy 241 AAGCTGPKGSDCLACLHFNHSGICELHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300
 Dd 241 AAGCTGPKGSDCLACLHFNHSGICELHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300

Qy 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSPCARVCYGLGNEHLREVRVTSAN 360
 Dd 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSPCARVCYGLGNEHLREVRVTSAN 360

Qy 361 IQEFAGCKIIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETIGYIYISAWPDSL 420
 Dd 361 IQEFAGCKIIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETIGYIYISAWPDSL 420

Qy 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRELGLSLALIHNTLHLCFYHTV 480
 Dd 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRELGLSLALIHNTLHLCFYHTV 480

Qy 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCQOFLRQEC 540
 Dd 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCQOFLRQEC 540

Qy 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFVCVARC 600
 Dd 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFVCVARC 600

Qy 601 PSGVKPDLSPYMPIWKPDDEGACQPCPCINCHSCVDLDDKGCPCAEQASPLTSIVSVA 660
 Dd 601 PSGVKPDLSPYMPIWKPDDEGACQPCPCINCHSCVDLDDKGCPCAEQASPLTSIVSVA 660

Qy 661 ILLVWVGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLTKETEL 720
 Dd 661 ILLVWVGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLTKETEL 720

Qy 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETLDEAYVMAGVSP 780
 Dd 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETLDEAYVMAGVSP 780

Qy 781 YVSRLLGICLTSTVQLVTQLMPIYGLLDHVRNRLGSDQLLNWCQIAKGSYLEDVR 840
 Dd 781 YVSRLLGICLTSTVQLVTQLMPIYGLLDHVRNRLGSDQLLNWCQIAKGSYLEDVR 840

Qy 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRRFT 900
 Dd 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRRFT 900

Qy 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVWCWM 960
 Dd 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVWCWM 960

Qy 961 IDSECRPRFRELVSFESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020
 Dd 961 IDSECRPRFRELVSFESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020

Qy 1021 EYLVPOQGFCCPDPAAGGMVHHRSSSTSGGGDLTLGLEPSEERAPRSLAPSEG 1080
 Dd 1021 EYLVPOQGFCCPDPAAGGMVHHRSSSTSGGGDLTLGLEPSEERAPRSLAPSEG 1080

Qy 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSQPQEV 1140
 Dd 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSQPQEV 1140

Qy 1141 NQPDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVAFGGAVENPEYLTTPQ 1200
 Dd 1141 NQPDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVAFGGAVENPEYLTTPQ 1200

QY 1201 GGAAPQHPPPAPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVPV 1255
 |||||
 DB 1201 GGAAPQHPPPAPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVPV 1255
 |||||

RESULT 5

ID AAE26366
 XX AAE26366 standard; protein; 1255 AA.
 AC AAE26366;
 XX 13-DEC-2002 (first entry)
 XX Human Her2 antigen.
 XX Human; immune response; T-helper cell epitope; chitosan; CTL response;
 XX vaccine; prostate cancer; breast cancer; Her2 antigen; cytostatic;
 XX immunostimulant.
 OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 1..23
 FT /label= Signal_peptide
 FT Protein 24..1255
 FT /note= "Mature human Her2 antigen"

XX WO200234287-A2.

XX 02-MAY-2002.

XX 26-OCT-2001; 2001WO-DK000705.

XX 27-OCT-2000; 2000DK-00001606.

PR 03-NOV-2000; 2000US-0245166P.

XX 18-JUN-2001; 2001DK-00000936.

XX (PHAR-) PHARMEXA AS.

XX Beier AM, Gautam A, Mouritsen S;

XX WPI; 2002-463339/49.

XX N-PSDB; AAD43986.

XX Inducing or enhancing an immune response against an antigen, particularly
 PT cytotoxic T-lymphocyte responses, for treating or ameliorating prostate
 PT or breast cancer, comprises administering the antigen formulated with
 PT chitosan.

XX Disclosure; Page 91-95; 97pp; English.

XX The invention relates to a method for inducing or enhancing an immune
 CC response against a polypeptide antigen in an animal, including human. The
 CC method comprises administering the polypeptide antigen or at least one
 CC variant which includes at least one first T-helper cell epitope that is
 CC foreign to the animal (foreign TH epitope) and is formulated with
 CC chitosan. The polypeptide antigen is weakly immunogenic or non-
 CC immunogenic. The invention is used as vaccine. The chitosan and
 CC polypeptide antigen or its variant are useful in the preparation of an
 CC immunogenic composition for inducing or enhancing an immune response,
 CC particularly CTL response, against the polypeptide or protein antigen.
 CC The method for inducing or enhancing an immune response is useful in
 CC treating or ameliorating cancer, e.g. prostate or breast cancer. The
 CC present sequence is human Her2 antigen

XX Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 5; Length 1255;
 Best Local Similarity 100.0%; Pred No. 0;
 Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLLALLPPGAASQTCTGTDMLRLPASPTHLDMLRHLYQCGQVVGNL 60
 |||||

DB 1 MELAALCRWGLLLALLPPGAASQTCTGTDMLRLPASPTHLDMLRHLYQCGQVVGNL 60
 QY 61 ELYLPTNASTSLFLODIQEVQGYVLIAHNQVROVFLORLRIVRGTQLPFDNALAVLDNG 120
 |||||
 DB 61 ELYLPTNASTSLFLODIQEVQGYVLIAHNQVROVFLORLRIVRGTQLPFDNALAVLDNG 120
 |||||
 QY 121 DPLNNTTPTVGASPGGLRELQRLSLEILKGGVLIQRNPOLCVQDTILWKDIFHKONQLA 180
 |||||
 DB 121 DPLNNTTPTVGASPGGLRELQRLSLEILKGGVLIQRNPOLCVQDTILWKDIFHKONQLA 180
 |||||
 QY 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVACAGCARGKGLPTDCCHEQC 240
 |||||
 DB 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVACAGCARGKGLPTDCCHEQC 240
 |||||
 QY 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRTTFGASCVTACP 300
 |||||
 DB 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRTTFGASCVTACP 300
 |||||
 QY 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
 |||||
 DB 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
 |||||
 QY 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPIQLPEQLQVFETLEETGYLIYSAPDSLP 420
 |||||
 DB 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPIQLPEQLQVFETLEETGYLIYSAPDSLP 420
 |||||
 QY 421 DLSVFNQVIRGRILHNGAYSITLQGLGISWGLRSLRELGSGLAIHNNHLCFVHTV 480
 |||||
 DB 421 DLSVFNQVIRGRILHNGAYSITLQGLGISWGLRSLRELGSGLAIHNNHLCFVHTV 480
 |||||
 QY 481 PWDQLFRNPQALLHTANRPEDECYVGEGLACHQLCARGHCWGPPTQCVCNCSQFLRGQEC 540
 |||||
 DB 481 PWDQLFRNPQALLHTANRPEDECYVGEGLACHQLCARGHCWGPPTQCVCNCSQFLRGQEC 540
 |||||
 QY 541 VEECRVLQGLPREYVNHARCLPCHPECCQPQNGSVTCFGEADQCACAHYKDPFPCVARC 600
 |||||
 DB 541 VEECRVLQGLPREYVNHARCLPCHPECCQPQNGSVTCFGEADQCACAHYKDPFPCVARC 600
 |||||
 QY 601 PSGVFPDLISYMPIWKFPPDEEGACQPCINCTHSCVDLDDKGPAPORASPLTSIVSAVVG 660
 |||||
 DB 601 PSGVFPDLISYMPIWKFPPDEEGACQPCINCTHSCVDLDDKGPAPORASPLTSIVSAVVG 660
 |||||
 QY 661 ILLVVVLGVVFGILIKRQOKIRKVTMRLLQETELVEPLTPSGAMPNOAQMRILKETEL 720
 |||||
 DB 661 ILLVVVLGVVFGILIKRQOKIRKVTMRLLQETELVEPLTPSGAMPNOAQMRILKETEL 720
 |||||
 QY 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSF 780
 |||||
 DB 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSF 780
 |||||
 QY 781 YYSRLIGICTSTVQLVTQIMPYGCLLDHVRNRRGLSGODLLNMCQIAGKMSYLEDVR 840
 |||||
 DB 781 YYSRLIGICTSTVQLVTQIMPYGCLLDHVRNRRGLSGODLLNMCQIAGKMSYLEDVR 840
 |||||
 QY 841 LVHRDLAARNVLVKSFNHVKITDFGLARLLDIDETEHADGGKVPKKNWMALESILRRRT 900
 |||||
 DB 841 LVHRDLAARNVLVKSFNHVKITDFGLARLLDIDETEHADGGKVPKKNWMALESILRRRT 900
 |||||
 QY 901 HQSDVMSYGVTVWELMTFGAKFYDGIPIAREIPDLLEKGBRLPQPPTCTIDVTVMYKCMW 960
 |||||
 DB 901 HQSDVMSYGVTVWELMTFGAKFYDGIPIAREIPDLLEKGBRLPQPPTCTIDVTVMYKCMW 960
 |||||
 QY 961 IDSECRPRRELVSFESRMARDPQRFVYIQRNEDLGPASPLDSTFYRSLLEDDMDGLVDA 1020
 |||||
 DB 961 IDSECRPRRELVSFESRMARDPQRFVYIQRNEDLGPASPLDSTFYRSLLEDDMDGLVDA 1020
 |||||
 QY 1021 EBYLVPQGGFFCDDPAPGAGGMVHHRSSSTRSGGDLTLGLPSEEEAPRSPAPSEG 1080
 |||||
 DB 1021 EBYLVPQGGFFCDDPAPGAGGMVHHRSSSTRSGGDLTLGLPSEEEAPRSPAPSEG 1080
 |||||
 QY 1081 AGSDVFDGDLGMAAKGLQSLTPHDPSPLOQRYSEDPVPLPSETDGYVAPLTCSPQPEYV 1140
 |||||
 DB 1081 AGSDVFDGDLGMAAKGLQSLTPHDPSPLOQRYSEDPVPLPSETDGYVAPLTCSPQPEYV 1140
 |||||

Db 1021 EYLVPQQGFFCPDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPLQRYSEDTVPLPSETDGVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPLQRYSEDTVPLPSETDGVAPLTCSPQPEYV 1140
QY 1141 NQDVRFQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
Db 1141 NQDVRFQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
QY 1201 GGAAPQHPPPAPSPAFDNLVYWDQPPRGAPPTFTKGTPTAENPEYLGLDVVP 1255
Db 1201 GGAAPQHPPPAPSPAFDNLVYWDQPPRGAPPTFTKGTPTAENPEYLGLDVVP 1255

RESULT 7

ABR47447
ID ABR47447 standard; protein; 1255 AA.
XX AC ABR47447;

DT 12-JUN-2003 (first entry)

DE Breast cancer associated protein sequence SEQ ID NO:126.

XX Human; breast cancer; cytostatic; gene therapy.

XX Homo sapiens.

XX WO2003004989-A2.

XX 16-JAN-2003.

XX 21-JUN-2002; 2002WO-US019669.

XX 21-JUN-2001; 2001US-0299887P.

XX 27-JUN-2001; 2001US-0301572P.

XX 18-JUL-2001; 2001US-0306501P.

XX 25-SEP-2001; 2001US-0325002P.

XX 05-MAR-2002; 2002US-0362585P.

XX 14-MAY-2002; 2002US-0380391P.

XX (MILL-) MILLENIUM PHARM INC.

XX Lillie J, Gannavarapu M, Glatt K, Hoeresh S, Kamatkar S;

XX Mertens M, Monahan JF, Myer V, Xu Y, Zhao X, Meyers RE;

XX Bast RC, Hortobagyi GN, Pusztai L, Meric F, Sahin A, Mills GB;

XX WPI; 2003-210381/20.

XX N-PSDB; ACC50139.

XX Breast cancer diagnosis or treatment by comparing the level of expression

XX of a marker in a patient sample with that in the control non-breast

XX cancer sample.

XX Claim 1; SEQ ID NO 126; 128pp; English.

XX The present invention describes a method for assessing whether a patient

XX is afflicted with breast cancer. The method comprises comparing the level

XX of expression of a marker (gene/polypeptide see ACC50076 to ACC50334 and

XX ABR47386 to ABR47632) in a patient sample and the normal level of

XX expression of the marker in a control non-breast cancer sample, where a

Query Match 100.0%; Score 6812; DB 6; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLLALLPPGAASCTVCTGTDMLRLPASPETHLDMLRLHYQGCVVQGNL 60
Db 1 MELAALCRWGLLLALLPPGAASCTVCTGTDMLRLPASPETHLDMLRLHYQGCVVQGNL 60
QY 61 ELTYLPNTHSLFLODIQEVQGVYVLAHNOVQVFLQRLIRVGTQLFDNVALAVLDNG 120
Db 61 ELTYLPNTHSLFLODIQEVQGVYVLAHNOVQVFLQRLIRVGTQLFDNVALAVLDNG 120
QY 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLTQRPOLCVQDTILKWDIFHKNNQLA 180
Db 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLTQRPOLCVQDTILKWDIFHKNNQLA 180
QY 181 LTLIDNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVTCAGGCARCKGFLPTDCCHQC 240
Db 181 LTLIDNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVTCAGGCARCKGFLPTDCCHQC 240
QY 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRTYFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRTYFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHNOEVTABDGTORCEKCKPCARVCVGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHNOEVTABDGTORCEKCKPCARVCVGLGMEHLREVRVTSAN 360
QY 361 IOEFAGCKKIFGSLAPLPESPDGPASNTAPLQPEQLQVFTELEITGYLIYSAMPDSLP 420
Db 361 IOEFAGCKKIFGSLAPLPESPDGPASNTAPLQPEQLQVFTELEITGYLIYSAMPDSLP 420
QY 421 DLSVFQNLQVIRGRIHNGAYSLTIQGLGISHGLRSLRELGSGLAIHHNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRIHNGAYSLTIQGLGISHGLRSLRELGSGLAIHHNTHLCFVHTV 480
QY 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQBC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQBC 540
QY 541 VEECRVLQGLPREYVYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPCVARC 600
Db 541 VEECRVLQGLPREYVYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPCVARC 600
QY 601 PSGVKPDLSYMPIMKFPDEEGACQPCINCHSCVDLDDKGCAPQORASPLTSIVSAVVG 660
Db 601 PSGVKPDLSYMPIMKFPDEEGACQPCINCHSCVDLDDKGCAPQORASPLTSIVSAVVG 660
QY 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMPNOAOMRILKETEL 720
Db 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMPNOAOMRILKETEL 720
QY 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVGS 780
Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVGS 780
QY 781 YYSRLGLCTSTVQLVTQLMPYGCILDHVRNRRGLSGODLLNMCQIAGKMSYLEYDR 840
Db 781 YYSRLGLCTSTVQLVTQLMPYGCILDHVRNRRGLSGODLLNMCQIAGKMSYLEYDR 840
QY 841 LVHRLDAARNVLVKSPNVHKITDFGLARLLDIDETEHADGGKVPDKWMALESILRRRT 900
Db 841 LVHRLDAARNVLVKSPNVHKITDFGLARLLDIDETEHADGGKVPDKWMALESILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPICTIDVTVMVYKWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPICTIDVTVMVYKWM 960
QY 961 IDSECRPRFRELVSFSSFMARDPQRFVYIIONEDIGPASPDLSTFFYSILDDMDGLVDA 1020
Db 961 IDSECRPRFRELVSFSSFMARDPQRFVYIIONEDIGPASPDLSTFFYSILDDMDGLVDA 1020
QY 1021 EYLVPOQGFCCPDPAAGAGMWHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080

Db 1021 EYLVPQQGFCPPAPGAGGVMHRRSSSTRSGGDLTLGLEPSEEAAPRPLADSEG 1080
Qy 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLOYSDDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLOYSDDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTSLSPGKNGVVKDVFAPGGAVENPEYLTQP 1200
Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTSLSPGKNGVVKDVFAPGGAVENPEYLTQP 1200
Qy 1201 GGAAPQHPHPPAFSPADNLYYWDQDPPERGAPPSTFKGPTTAENPYLGLDVPV 1255
Db 1201 GGAAPQHPHPPAFSPADNLYYWDQDPPERGAPPSTFKGPTTAENPYLGLDVPV 1255

RESULT 8
ABP74708
ID ABP74708 standard; protein; 1255 AA.
XX AC ABP74708;
XX AC
XX AC
DT 03-FEB-2003 (first entry)
XX Human Her2/Neu protein SEQ ID NO:594.
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
DE T cell; chromosome 17q21-q22.
XX Homo sapiens.
XX W0200281646-A2.
XX PN
XX PD
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
XX Simard JJJL, Diamond DC, Liu L, Xie Z;
XX
XX WPI: 2003-067518/06.
DR N-PSDB; ABQ83856.
XX
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
XX Claim 1; Page 175; 352pp; English.
XX
XX The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 METAAALCRWGLLALALPPGAASQVCTGTDMLRLPASPTHDLMLRHLHYGQCVVQGNL 60
Db 1 METAAALCRWGLLALALPPGAASQVCTGTDMLRLPASPTHDLMLRHLHYGQCVVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIQEVQGVVLAHNOVQVPLQRLRIVRGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQGVVLAHNOVQVPLQRLRIVRGTQLFEDNYALAVLDNG 120
Qy 121 DPLNNTPTVTGASPGGLRELQLRSLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNOLA 180
Db 121 DPLNNTPTVTGASPGGLRELQLRSLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNOLA 180
Qy 181 LTLIDTNRSPACHPCSPCKGRCWGESSEDCSLTRTVCCAGGCARCKGPLTDCCHQEC 240
Db 181 LTLIDTNRSPACHPCSPCKGRCWGESSEDCSLTRTVCCAGGCARCKGPLTDCCHQEC 240
Qy 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRTYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRTYTFGASCVTACP 300
Qy 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTSAN 360
Qy 361 IQEPACKKIFGSLAFPLPESFDGDPASNTAPLOEQLOVFEETLEETIGYLIYISAWPDSL 420
Db 361 IQEPACKKIFGSLAFPLPESFDGDPASNTAPLOEQLOVFEETLEETIGYLIYISAWPDSL 420
Qy 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCFVHTV 480
Qy 481 PWDQLFRNHQALLHTANRPEDCEVGEGLACHQLCARGHCWGPGTCVNCSPFLRQEC 540
Db 481 PWDQLFRNHQALLHTANRPEDCEVGEGLACHQLCARGHCWGPGTCVNCSPFLRQEC 540
Qy 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFEGPADQCVACHYKDPFCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFEGPADQCVACHYKDPFCVARC 600
Qy 601 PSGVKPDLSPYMTWKFPEDEGACQPCINCHTSCVDLDDKGCAPAEORASPLTSTVSAVG 660
Db 601 PSGVKPDLSPYMTWKFPEDEGACQPCINCHTSCVDLDDKGCAPAEORASPLTSTVSAVG 660
Qy 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQSTELVEPLTPSGAMPNQAMRILKETEL 720
Db 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQSTELVEPLTPSGAMPNQAMRILKETEL 720
Qy 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILD EAYVMAGVSP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILD EAYVMAGVSP 780
Qy 781 YVSRLLGICLTSVQLVTQMLPYGCLLDHVRENRGRIGSODLLNWCQIAKGSYLEDVR 840
Db 781 YVSRLLGICLTSVQLVTQMLPYGCLLDHVRENRGRIGSODLLNWCQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNVLKSPNHVKITDIFGLARLDDIDETEHADGGKVP IKWMALESILRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDIFGLARLDDIDETEHADGGKVP IKWMALESILRRFT 900
Qy 901 HQSDWSYGVTVWELMTFGAKPYDGI PARBI POLLEKGERLPQPPICITIDVYIMVKCWM 960
Db 901 HQSDWSYGVTVWELMTFGAKPYDGI PARBI POLLEKGERLPQPPICITIDVYIMVKCWM 960
Qy 961 IDSECRPRRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Db 961 IDSECRPRRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Qy 1021 EYLVLPQQGFCPPAPGAGGVMHRRSSSTRSGGDLTLGLEPSEEAAPRPLADSEG 1080

Db 1021 EYLVTNQLSFLQDIQEVQGVLIHNNQVQPLQRLIRVGTQLFEDNALVALVDNG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
QY 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
QY 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVFP 1255
Db 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVFP 1255

RESULT 9

AAE38390
ID AAE38390 standard; protein; 1255 AA.

XX AAE38390;

DT 20-NOV-2003 (first entry)

XX Human c-erbB2 protein.

XX ErbB2; HER2; neu; breast cancer; protein therapy; human.

XX Homo sapiens.

XX Key Location/Qualifiers
FH Domain 1..653

FT /note= "Extracellular domain"

XX WO2003061559-A2.

XX 31-JUL-2003.

XX 15-OCT-2002; 2002WO-US032947.

XX 12-OCT-2001; 2001US-0329183P.

XX (UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE.

XX Krag DN, Pero SC, Oligino L;

XX WPI; 2003-671426/63.

XX N-PSDB; AAD58073.

XX A composition for diagnosing, preventing or treating disorders
PT characterized by ErbB2 overexpression (e.g. breast cancer) comprises an
PT ErbB2 binding peptide that binds specifically to the extracellular domain
PT of ErbB2.

XX Disclosure; Page 95-100; 106pp; English.

XX The present invention relates to peptides and peptidomimetics that bind
CC to the extracellular domain of ErbB2 (also known as HER2 or neu).
CC Sequences of the invention are useful in the diagnosis, prevention and
CC treatment of disorders characterised by ErbB2 overexpression (e.g. breast
CC cancer). The invention is also useful in protein therapy. The present
CC sequence is human c-erbB2 protein

XX Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 6; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLIALLPPGAASQVCTGTDMLRLPASPEHLDMLRHLYQGCQVVOGNI 60

Db 1 MELAALCRWGLLIALLPPGAASQVCTGTDMLRLPASPEHLDMLRHLYQGCQVVOGNI 60

QY 61 ELYLTNQLSFLQDIQEVQGVLIHNNQVQPLQRLIRVGTQLFEDNALVALVDNG 120

Db 61 ELYLTNQLSFLQDIQEVQGVLIHNNQVQPLQRLIRVGTQLFEDNALVALVDNG 120
QY 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLIQORNQOLCYQDITLWKDIFPKKNQLA 180
Db 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLIQORNQOLCYQDITLWKDIFPKKNQLA 180
QY 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
Db 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
QY 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMNPBGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFESMNPBGRYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHNOEVTAEQTCRCKKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHNOEVTAEQTCRCKKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IQEFAGCKKIFGSLAFLPESPDGDPASNTAPLOPELOQVFETLEETGVIYISAWPDSL 420
Db 361 IQEFAGCKKIFGSLAFLPESPDGDPASNTAPLOPELOQVFETLEETGVIYISAWPDSL 420
QY 421 DLSVFONQVIRGRILHNGAYSILTQGLGISWGLRSLRELGLALIHNNTHLCFVHTV 480
Db 421 DLSVFONQVIRGRILHNGAYSILTQGLGISWGLRSLRELGLALIHNNTHLCFVHTV 480
QY 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPGPTQCVNCSQFLRGQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPGPTQCVNCSQFLRGQEC 540
QY 541 VEECRVLQGLPREYVNAHCLCHPECOPONGSVTCFGPEADQCVACAHKOPPCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLCHPECOPONGSVTCFGPEADQCVACAHKOPPCVARC 600
QY 601 PSGVKPDLSPYMPIWKFPDEEGACQPCPINCTHSCVDLDDKGCPCAEORASPLTSIVSAVVG 660
Db 601 PSGVKPDLSPYMPIWKFPDEEGACQPCPINCTHSCVDLDDKGCPCAEORASPLTSIVSAVVG 660
QY 661 ILLVVLGVVFGILIKRROOKIRKVTMRLLQETELVEPLTPSGAMPNQAQMRILKETEL 720
Db 661 ILLVVLGVVFGILIKRROOKIRKVTMRLLQETELVEPLTPSGAMPNQAQMRILKETEL 720
QY 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSP 780
QY 781 YVSRLLIGICLTSTVQLVTOLMPEYGCILLDHVRENRRGLSQDILLNWCQIAKMSYLEDVR 840
Db 781 YVSRLLIGICLTSTVQLVTOLMPEYGCILLDHVRENRRGLSQDILLNWCQIAKMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVKPIKMWALSILRRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVKPIKMWALSILRRRFT 900
QY 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICTIDVVMWVKWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICTIDVVMWVKWM 960
QY 961 IDSECRPRPRELVSEFSSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDMDGLVDA 1020
Db 961 IDSECRPRPRELVSEFSSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDMDGLVDA 1020
QY 1021 EBYLVPOQGFCDPAPGAGGMVHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080
Db 1021 EBYLVPOQGFCDPAPGAGGMVHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
QY 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200

Db 1141 NOPDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYLTQP 1200
 Qy 1201 GGAAPQPHPPAFSPAFDNLVYWDQDPPERGAAPPSTFKGTPAENPEYLGIDVPV 1255
 Db 1201 GGAAPQPHPPAFSPAFDNLVYWDQDPPERGAAPPSTFKGTPAENPEYLGIDVPV 1255

RESULT 10

ADA38143
 ID ADA38143 standard; protein; 1255 AA.

XX AC ADA38143;

XX DT 20-NOV-2003 (first entry)

XX DE Human erb-B protein, a target of a therapeutic nanostructure.

XX KW implantable microscopic device; nanostructure; ligand; gout; bone injury;
 XX KW cancer; HIV; p1; p2; human; erb-B.

XX OS Homo sapiens.

XX PN W02003053357-A2.

XX PD 03-JUL-2003.

XX PF 18-DEC-2002; 2002WO-US040678.

XX PR 19-DEC-2001; 2001US-0342894P.

XX PA (WILK-) WILK PATENT DEV CORP.

XX PI Stirbl RC, Snead ML, Xu J, Vitetta ES, Wilk PJ;

XX DR WPI; 2003-569175/53.

XX PT Diagnostic or therapeutic method involves inserting medical devices
 PT including nanostructures provided with ligand into patient, and attaching
 PT nanostructures through ligand to predetermined target structure inside
 PT patient.

XX PS Example 4; Page 14-15; 36pp; English.

XX CC This invention relates to a novel medical method comprising providing an
 CC implantable microscopic device including a nanostructure provided with a
 CC ligand for effectively coupling the nanostructure to a predetermined
 CC chemical or molecular site. Specifically, the microscopic device is
 CC directly implanted into patients at predetermined sites, and on reaching
 CC the target site the nanostructure is activated to perform a preselected
 CC medical diagnostic or therapeutic function. Accordingly, the present
 CC invention describes using this method for the treatment of various
 CC illnesses including gout whereby the target is a uric acid deposit that can be
 CC disrupted by activation of the nanostructure, as well as bone injuries
 CC and cancer. Furthermore, the target can consist of a microorganism
 CC containing a strand of viral DNA, such that heating the nanostructure can
 CC destroy the microorganism, which in turn can be used therapeutically to
 CC treat HIV patients. This polypeptide sequence is the human erb-B protein
 CC that is over expressed in human breast tumour cells and therefore acts as
 CC target for a nanostructure of the invention.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLLALLPPGAASCTGCTDMKRLPASPEHLDMLRHLVQGCQVQGNL 60

Db 1 MELAALCRWGLLLALLPPGAASCTGCTDMKRLPASPEHLDMLRHLVQGCQVQGNL 60

Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHNOVQVPLQRLRIVRGQTQFEDNYALAVLDNG 120

Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIHNOVQVPLQRLRIVRGQTQFEDNYALAVLDNG 120

Qy 121 DPLNNTTPTVTGASPGGLRELQLRSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNQLA 180
 Db 121 DPLNNTTPTVTGASPGGLRELQLRSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNQLA 180
 Qy 181 LTLIDNRSRACHPCSPMKCGSRCSWESSSDCQSLTRTVAGGCARCKGPLPTDCCHQC 240
 Db 181 LTLIDNRSRACHPCSPMKCGSRCSWESSSDCQSLTRTVAGGCARCKGPLPTDCCHQC 240
 Qy 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
 Db 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
 Qy 301 YNYLSTDVGSCTLVCPHNOEVAEDGTQRCCKSPCARVCYGLGMEHLREVRVAVTSAN 360
 Db 301 YNYLSTDVGSCTLVCPHNOEVAEDGTQRCCKSPCARVCYGLGMEHLREVRVAVTSAN 360
 Qy 361 IQEFAGCKITFGSLAFPLPESFDGDPASNTAPLQPEQLQVPEETLEEITGYLIYISAWPDSL 420
 Db 361 IQEFAGCKITFGSLAFPLPESFDGDPASNTAPLQPEQLQVPEETLEEITGYLIYISAWPDSL 420
 Qy 421 DLSVFQNLQVIRGRIILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCHFVHTV 480
 Db 421 DLSVFQNLQVIRGRIILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCHFVHTV 480
 Qy 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCQSLRGOEC 540
 Db 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCQSLRGOEC 540
 Qy 541 VEECRVLQGLPREYVNAHCLPCHPBCQPONGSVTCFGEADQCVCAHYKDPFCVAVC 600
 Db 541 VEECRVLQGLPREYVNAHCLPCHPBCQPONGSVTCFGEADQCVCAHYKDPFCVAVC 600
 Qy 601 PSGVKPDLSPYIWKFPDEBEGACQPCPINCTHSCVDLDDKGCPEAQSPASPLTSIVSAVVG 660
 Db 601 PSGVKPDLSPYIWKFPDEBEGACQPCPINCTHSCVDLDDKGCPEAQSPASPLTSIVSAVVG 660
 Qy 661 ILLVVLGVVFGVILIKRQOKIRKYTWRRLLQTELVEPLTPSGAMPNQAMRLIKETEL 720
 Db 661 ILLVVLGVVFGVILIKRQOKIRKYTWRRLLQTELVEPLTPSGAMPNQAMRLIKETEL 720
 Qy 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKETLDSAYVMAGVSP 780
 Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKETLDSAYVMAGVSP 780
 Qy 781 YVSRLLGICLTSTVQLTQMPYGLLDHVRNRRGLSGQDLNWCQIAKGSYLEDVR 840
 Db 781 YVSRLLGICLTSTVQLTQMPYGLLDHVRNRRGLSGQDLNWCQIAKGSYLEDVR 840
 Qy 841 LVHRDLAARNVLKSPNHVKITDIFGLARLLDIDETEVHADGGKVPKIMMALESILRRRFT 900
 Db 841 LVHRDLAARNVLKSPNHVKITDIFGLARLLDIDETEVHADGGKVPKIMMALESILRRRFT 900
 Qy 901 HQSDVMSYGVTVWELMTFGAKPYDGIAPAREIPDLLEKGERLPQPPICITIDVYIMVAKWM 960
 Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIAPAREIPDLLEKGERLPQPPICITIDVYIMVAKWM 960
 Qy 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020
 Db 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGASPLDSTFYRSLLEDMDGLVDA 1020
 Qy 1021 EYLVVPOQGFPCPDPAAGGMVHHRSSSTSBGGDLTLGLEPSEEAAPRSLAPSEG 1080
 Db 1021 EYLVVPOQGFPCPDPAAGGMVHHRSSSTSBGGDLTLGLEPSEEAAPRSLAPSEG 1080
 Qy 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSPOPEYV 1140
 Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSPOPEYV 1140
 Qy 1141 NQPDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYLTQP 1200
 Db 1141 NQPDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYLTQP 1200

QY 1201 GGAAPQHPPPAFSPAFDNLVYWDQDPPRGAPPSTFKGTPTAENPEYLGLDVPV 1255
DB |||||
1201 GGAAPQHPPPAFSPAFDNLVYWDQDPPRGAPPSTFKGTPTAENPEYLGLDVPV 1255
|||
RESULT 11
ID ADA37255
AC ADA37255; protein; 1255 AA.
AC ADA37255;
XX
DT 20-NOV-2003 (first entry)
XX Human ErbB2 amino acid sequence SEQ ID NO:5.
DE
DE
KW crystal; epithelial growth factor; EGF;
KW epithelial growth factor receptor; EGFR; cytostatic; hepatotropic;
KW antiulcer; antidiabetic; dermatological; antiparkinsonian; fungicide;
KW cancer; cancer proliferation; liver function disorder; ulcer;
KW Parkinson's disease; bone resorption disorder; ringworm; human;
KW protein co-ordinate data; ErbB2.
XX
OS Homo sapiens.
XX
XX WO2003066677-A1.
PN
XX
XX 14-AUG-2003.
PD
XX
PF 12-SEP-2002; 2002WO-JP009332.
XX
XX 05-FEB-2002; 2002JP-00028780.
PR
XX
XX (NISC-) JAPAN SCI & TECHNOLOGY CORP.
PA (RIKE) RIKEN KK.
PA (MOCH) MOCHIDA PHARM CO LTD.
XX
XX Yokoyama S, Ogiso H, Shirouzu M, Nureki O, Ishitani R, Saito K;
PI Matsusue T, Nakao N, Muramatsu H, Shinozaki M;
PI
DR WPI; 2003-627750/59.
XX
XX Crystalline complex of epithelial growth factor with its receptor for
PT design of ligands and antibodies to the receptor for treatment of ulcers,
PT cancer and Parkinson's disease.
PT
XX
PS Example 4; Page 442-450; 489pp; Japanese.
XX
CC The present invention describes crystals of a complex (C) of epithelial
CC growth factor (EGF) with epithelial growth factor receptor (EGFR),
CC containing a dimer of a complex of EGF with EGFR in the molar ratio 1:1.
CC Also described: (1) preparation of EGFR which can be crystallised, in
CC which recombinant EGFR is prepared using Lec8 cells and then
CC deglycosylated using glycosidase; (2) preparation of a complex of EGFR
CC with EGF or with another EGFR activity regulator (I), in which
CC crystallisable EGFR is contacted with EGF or (I); (3) screening potential
CC (I) by determining the fit of the 3D structure of (I) to that of the EGF-
CC EGFR complex; (4) substances obtained by the screening method for use as
CC agonists and antagonists of EGFR; (5) screening EGF or EGFR mutants
CC having an amino acid mutation in the EGFR dimerisation region or in the
CC EGF-EGFR interaction site, by comparing their 3D structure to that of EGF
CC -EGFR; (5) design of epitopes using the 3D structure of the EGF-EGFR
CC complex; (6) preparation of anti-EGF or anti-EGFR antibodies using the
CC epitopes identified; (7) anti-EGF or anti-EGFR antibodies prepared by
CC this method; and (8) polypeptides and their salts containing all or part
CC of the amino acid sequence of the EGFR dimerisation site. (C) has
CC cytostatic, hepatotropic, antiulcer, antidiabetic, dermatological,
CC antiparkinsonian and fungicide activities. (C) can be used in the
CC identification of agonists and antagonists of EGFR for use in the
CC treatment and prevention of cancer and cancer proliferation, liver
CC function disorders, ulcers (including stomach ulcer, skin ulcer and ulcer
CC arising from diabetic complications), Parkinson's disease, bone
CC resorption disorders and ringworm. The present sequence represents a
CC human ErbB2 amino acid sequence, which is used in the exemplification of

CC the present invention.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLLALLPPGAASQTCTGTDMLKRLPASPETHLDMLRHLYQGCVVQGNL 60
DB |||||
1 MELAALCRWGLLLALLPPGAASQTCTGTDMLKRLPASPETHLDMLRHLYQGCVVQGNL 60
|||
QY 61 ELTYLPTNASLSFLODIQEVQGVYLIHANOQVPLQRLRIVRGTQLPEDNALAVLDNG 120
DB |||||
61 ELTYLPTNASLSFLODIQEVQGVYLIHANOQVPLQRLRIVRGTQLPEDNALAVLDNG 120
|||
QY 121 DFLNNTTPTVGASPGGLRELQRLSTEILKGGVLIQRPOLCYQDTILWKDIFHKKNQLA 180
DB |||||
121 DFLNNTTPTVGASPGGLRELQRLSTEILKGGVLIQRPOLCYQDTILWKDIFHKKNQLA 180
|||
QY 181 LTLIDTNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVCAAGCARCKGPLETDCHEQC 240
DB |||||
181 LTLIDTNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVCAAGCARCKGPLETDCHEQC 240
|||
QY 241 AAGCTGPKHSDCLACLFHNHSGICELHCPALVTYNTDTFESMPNDEGRYTFGASCVTACP 300
DB |||||
241 AAGCTGPKHSDCLACLFHNHSGICELHCPALVTYNTDTFESMPNDEGRYTFGASCVTACP 300
|||
QY 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
DB |||||
301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
|||
QY 361 IOEPAGCKKIFGSLAPLPESFDGDPASNTAPLOPQOLQVFETLEBITGYLIYSAMPDLSL 420
DB |||||
361 IOEPAGCKKIFGSLAPLPESFDGDPASNTAPLOPQOLQVFETLEBITGYLIYSAMPDLSL 420
|||
QY 421 DLSVFQNLQVIRGRILHNGAYSLTIQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
DB |||||
421 DLSVFQNLQVIRGRILHNGAYSLTIQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
|||
QY 481 PWDQFRNPQHALHTANRPEDECYCGEGACHQLCARGHCWGPGPTQVCNCSQFLRGQBC 540
DB |||||
481 PWDQFRNPQHALHTANRPEDECYCGEGACHQLCARGHCWGPGPTQVCNCSQFLRGQBC 540
|||
QY 541 VECECVLOGLPREYVNHARHCLPCHPEQOPONGSVTCFGEADQCACAHYKDPFFCVARC 600
DB |||||
541 VECECVLOGLPREYVNHARHCLPCHPEQOPONGSVTCFGEADQCACAHYKDPFFCVARC 600
|||
QY 601 PSGVKPDLISYMPIWKFPEEGACQPCINCTHSCVDLDDKGCPAEORASPLTSIYSAVVG 660
DB |||||
601 PSGVKPDLISYMPIWKFPEEGACQPCINCTHSCVDLDDKGCPAEORASPLTSIYSAVVG 660
|||
QY 661 ILLVVLGVVFGILIKRRQOKIRKYTMRLLOQETELVEPLTPSGAMPNOAQRILKETEL 720
DB |||||
661 ILLVVLGVVFGILIKRRQOKIRKYTMRLLOQETELVEPLTPSGAMPNOAQRILKETEL 720
|||
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSF 780
DB |||||
721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSF 780
|||
QY 781 VYSRLILGICLTSTVQLVTQLMPYGLLDHVRNRRGLSGQDLNLCWCMQIAGMSYLEDVR 840
DB |||||
781 VYSRLILGICLTSTVQLVTQLMPYGLLDHVRNRRGLSGQDLNLCWCMQIAGMSYLEDVR 840
|||
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDEYHADGGKVPKKNMALESILRRRT 900
DB |||||
841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDEYHADGGKVPKKNMALESILRRRT 900
|||
QY 901 HQSDVMSYGVTVWELMTFGAKYDGPAREIPDLLEKGERIPQPPICITDVMYMKWM 960
DB |||||
901 HQSDVMSYGVTVWELMTFGAKYDGPAREIPDLLEKGERIPQPPICITDVMYMKWM 960
|||
QY 961 IDSECRPRPRELVSEFSRMRDPQRFVVTQNEDLGPASPLDSTFYRSLLEDDEDDMGDLVDA 1020

||||| 961 IDSECRPRFELVSEFARMARDPQRFVVIQWEDLGASPLDSTFYRSILLEDMDGLVDA 1020
Db ADB67621
||||| 1021 EYLVPQGGFCPPAPGAGWVHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Qy
||||| 1021 EYLVPQGGFCPPAPGAGWVHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Db
||||| 1081 AGSDVFDGDLGMGAAGLQSLPTHDPSPLOQYSDDTVPLPSETDGYVAPLTCSPQPEYV 1140
Qy
||||| 1081 AGSDVFDGDLGMGAAGLQSLPTHDPSPLOQYSDDTVPLPSETDGYVAPLTCSPQPEYV 1140
Db
||||| 1141 NOPVRRQPPSPRGGPIPAARPAAGATLERAKTILSPGKGVVVDVAFGGAVENPEYLTPO 1200
Qy
||||| 1141 NOPVRRQPPSPRGGPIPAARPAAGATLERAKTILSPGKGVVVDVAFGGAVENPEYLTPO 1200
Db
||||| 1201 GGAAPQHPHPPAFSPAFDNLVYWDQDPPERGAPSTFKGPTAENPEYLGLDVVPV 1255
Qy
||||| 1201 GGAAPQHPHPPAFSPAFDNLVYWDQDPPERGAPSTFKGPTAENPEYLGLDVVPV 1255
Db
RESULT 12
ID ADB67621 standard; protein; 1255 AA.
XX
AC ADB67621;
XX
DT 04-DEC-2003 (first entry)
XX
DE Human epidermal growth factor receptor 2 protein.
XX
KW cystostatic; human epidermal growth factor receptor-3; HER-3; heregulin;
KW HER2; tyrosine kinase activity; cancer; receptor.
XX
OS Homo sapiens.
XX
PN WO2003011897-A1.
XX
PD 13-FEB-2003.
XX
PF 29-JUL-2002; 2002WO-US023963.
XX
PR 27-JUL-2001; 2001US-0308341P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Singer E, Landgraf R, Slamon DJ, Eisenberg D;
XX
DR WPI; 2003-300482/29.
DR N-PSDB; ADB67620.
XX
PT Novel human epidermal growth factor receptor 3 variant as agonist or
PT antagonist of HER3 receptor, for diagnosis/treatment of cells or
PT pathological conditions associated with aberrant expression of heregulin
or HER3.
XX
PS Disclosure; Page 81-82; 137pp; English.
XX
CC The invention relates to a non-naturally occurring human epidermal growth
CC factor receptor (HER)-3 variant polypeptide comprising amino acids 19-329
CC or 20-329 of the 1342 amino acid HER3 polypeptide (ADB67617) or a
CC sequence which differs from native HER3 polypeptide and having amino acid
CC substitutions at residues E43, N44, K51, E64, V66 and V110 of S1, is new.
CC The variant HER-3 specifically binds to the heregulin polypeptide
CC (ADB67619), exhibits an impaired ability to interact with HER2
CC polypeptide (ADB67621), or has an ability to inhibit the interaction
CC between wild-type HER3 and heregulin. The polypeptide is useful for
CC identifying a compound which specifically binds to heregulin binding
CC domain in a HER3 variant polypeptide. The method further involves
CC determining whether the test compound inhibits or enhances the heregulin
CC induced tyrosine kinase activity associated with a HER3 polypeptide. The
CC polypeptide is also useful for determining whether a test compound
CC modulates the interaction between a heregulin polypeptide, and the
CC variant HER-3 polypeptide. The HER-3 polypeptide is also useful for

CC inhibiting the interaction between a heregulin polypeptide and HER3
CC polypeptide, e.g. for treating cancer. The polypeptide is also useful for
CC stimulating or activating HER3 receptor. This sequence represents the
CC wild type human HER-2 polypeptide.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPPGAASTQVCTGTDMLKRLPASPEHLDMLRHLYQGQVQGNL 60
Db 1 MELAALCRWGLLALLPPGAASTQVCTGTDMLKRLPASPEHLDMLRHLYQGQVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIQEVGVVLAHNOVROVPLQRLIRVGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVGVVLAHNOVROVPLQRLIRVGTQLFEDNYALAVLDNG 120
Qy 121 DPLNNTTPTVTGASPGGLRELQLSLTEILKGGVLIQRNPOLCYQDITLWKDI FHKNNOLA 180
Db 121 DPLNNTTPTVTGASPGGLRELQLSLTEILKGGVLIQRNPOLCYQDITLWKDI FHKNNOLA 180
Qy 181 LTLIDNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVCCAGCARCKGPLTDCCHQC 240
Db 181 LTLIDNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVCCAGCARCKGPLTDCCHQC 240
Qy 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Qy 301 YNYLSTDVSGCTLVCPHNOEVTAEDGTQCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVSGCTLVCPHNOEVTAEDGTQCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Qy 361 IQEFAGCKKIFGSLAFPLPESFDGDPASNTAPLQPELQVFETLEETIGYLYISAWPDSL 420
Db 361 IQEFAGCKKIFGSLAFPLPESFDGDPASNTAPLQPELQVFETLEETIGYLYISAWPDSL 420
Qy 421 DLSVFQNLQVIRGRILHNGAYSLTLOGLGISWGLSLRELGLSLALIHNTLHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTLOGLGISWGLSLRELGLSLALIHNTLHLCFVHTV 480
Qy 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTCVNCSQFLRQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTCVNCSQFLRQEC 540
Qy 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCAHAHYKDPFPCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCAHAHYKDPFPCVARC 600
Qy 601 PSGVKPDLVSNPTWKPFDEBACQPCPINTHSCVDLDDKGCAPQASPLTSIVSVAVG 660
Db 601 PSGVKPDLVSNPTWKPFDEBACQPCPINTHSCVDLDDKGCAPQASPLTSIVSVAVG 660
Qy 661 ILLVVLGVVFGVGLIKRQOKIRKTYMRRLLQETLVEPLTPSGAMPNQAMRILKTEL 720
Db 661 ILLVVLGVVFGVGLIKRQOKIRKTYMRRLLQETLVEPLTPSGAMPNQAMRILKTEL 720
Qy 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKELDEAYVMAGVGP 780
Db 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKELDEAYVMAGVGP 780
Qy 781 YVSRLLIGICLTSTVQLVTLMPYGCILLDVRNRRGLSGDILLNWCQIAKGSYLEDVR 840
Db 781 YVSRLLIGICLTSTVQLVTLMPYGCILLDVRNRRGLSGDILLNWCQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNVLKSPNNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRFT 900
Db 841 LVHRDLAARNVLKSPNNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRFT 900
Qy 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPPOPICTIDVYIMVWCWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPPOPICTIDVYIMVWCWM 960

Db 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPQPCTIDVYIMVKWM 960
 QY 961 IDSECRPRFRELVSERMRARDQRFVVIQNEIDLGASPLDSTFYKSLLEDGMDGLVDA 1020
 Db 961 IDSECRPRFRELVSERMRARDQRFVVIQNEIDLGASPLDSTFYKSLLEDGMDGLVDA 1020
 QY 1021 EYLVPQGFCDPDPAPGAGMWHRRHSSTSGGGDLTLGLEPSEERAPRSLAPSEG 1080
 Db 1021 EYLVPQGFCDPDPAPGAGMWHRRHSSTSGGGDLTLGLEPSEERAPRSLAPSEG 1080
 QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYV 1140
 Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYV 1140
 QY 1141 NQPDVPRQPPSPREGPLPAARPAAGATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTQ 1200
 Db 1141 NQPDVPRQPPSPREGPLPAARPAAGATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTQ 1200
 QY 1201 GGAAPQHPHPPAFSPAFDNLVYWDQPPRGPAPPSTFKGTPTAENPEYLGLDVVP 1255
 Db 1201 GGAAPQHPHPPAFSPAFDNLVYWDQPPRGPAPPSTFKGTPTAENPEYLGLDVVP 1255

RESULT 13

ADH13187

ID ADH13187 standard; protein; 1255 AA.

XX AC ADH13187;

XX DT 11-MAR-2004 (first entry)

XX DE Human malignant neoplasia-related protein SeqID36.

XX KW malignant neoplasia; cytostatic; breast cancer; ovarian cancer;

XX KW gastric cancer; colon cancer; esophageal cancer; mesenchymal cancer;

XX KW bladder cancer; non-small cell lung cancer; human.

XX OS Homo sapiens.

XX PN EP1365034-A2.

XX PD 26-NOV-2003.

XX PF 09-MAY-2003; 2003EP-00010447.

XX PR 21-MAY-2002; 2002EP-00010291.

XX PR 13-FEB-2003; 2003EP-00003112.

XX PA (FARB) BAYER AG.

XX PI Wirtz R, Munnes M, Kallabis H;

XX PS WPI; 2004-073279/08.

XX DR N-PSDB; ADH13161.

XX PT Predicting, diagnosing or prognosing malignant neoplasia by detecting at

XX PT least two markers, where the markers are genes from one or more

XX PT chromosomal regions altered in malignant neoplasia.

XX PS Claim 12; SEQ ID NO 36; 267pp; English.

XX CC This invention relates to a novel method for the prediction, diagnosis,
 CC or prognosis of malignant neoplasia by the detection of at least two
 CC markers. The invention may also be useful for the development of
 CC cytostatic compounds through the regulation of the expression of a gene
 CC or activity of a protein associated with malignant neoplasia. The method
 CC is useful for prediction, diagnosis or prognosis of malignant neoplasia
 CC such as breast cancer, ovarian cancer, gastric cancer, colon cancer,
 CC esophageal cancer, mesenchymal cancer, bladder cancer or non-small cell
 CC lung cancer. The polynucleotides and polypeptides defined in the
 CC specification, antisense polynucleotides targeting the polynucleotides,
 CC antibodies targeting either one of the polynucleotides or polypeptides,
 CC and compounds identified by the screening methods are useful for

CC preventing or treating malignant neoplasia. The disease treated is
 CC preferably breast cancer. The present sequence is that of a human
 CC malignant neoplasia-related protein which may be used in the method of
 CC the invention.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 8; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLALLPPGAASCTCTGDMKRLPASPETHLDMRLHYQSCVVGSL 60
 Db 1 MELAALCRWGLLALLPPGAASCTCTGDMKRLPASPETHLDMRLHYQSCVVGSL 60
 QY 61 ELTYLPTNASLFLQDIQEVQGYVLIHNOVQVPLQRLRIVRGTLQFEDNYALAVLDNG 120
 Db 61 ELTYLPTNASLFLQDIQEVQGYVLIHNOVQVPLQRLRIVRGTLQFEDNYALAVLDNG 120
 QY 121 DPLNNTTPTVTGASPGGLRELQRLSLEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQLA 180
 Db 121 DPLNNTTPTVTGASPGGLRELQRLSLEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQLA 180
 QY 181 LTLIDTNRSRACHPCSPMKSGRCWGESSEDCQSLTRTVCAGGCARCKGPLTDCCHEOC 240
 Db 181 LTLIDTNRSRACHPCSPMKSGRCWGESSEDCQSLTRTVCAGGCARCKGPLTDCCHEOC 240
 QY 241 AAGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
 Db 241 AAGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
 QY 301 YNYLSTDVGSCTLVCPLNHNEVTABDGTQRCBKSPCARVCYGLGMEHLREVRVTSAN 360
 Db 301 YNYLSTDVGSCTLVCPLNHNEVTABDGTQRCBKSPCARVCYGLGMEHLREVRVTSAN 360
 QY 361 IQEFAGCKKI FGSLLAFPLPESFDGDPASNTAPLQPOLQVFETLEETGLYLYISAMPDSL 420
 Db 361 IQEFAGCKKI FGSLLAFPLPESFDGDPASNTAPLQPOLQVFETLEETGLYLYISAMPDSL 420
 QY 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLRSLRELGLSLALIHNNTHLCFVHTV 480
 Db 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLRSLRELGLSLALIHNNTHLCFVHTV 480
 QY 481 PWDQLFRNPHQALLHTANRPEDECVGBGLACHQLCARGHCWGPPTQVCNCSQFLRGQSC 540
 Db 481 PWDQLFRNPHQALLHTANRPEDECVGBGLACHQLCARGHCWGPPTQVCNCSQFLRGQSC 540
 QY 541 VEECRVLQGLPREYVNAHCLPCHPECPONGSVTCFGEADQCVACAHYKDPFPCVARC 600
 Db 541 VEECRVLQGLPREYVNAHCLPCHPECPONGSVTCFGEADQCVACAHYKDPFPCVARC 600
 QY 601 PSGVKPDLSPYMPINWKFPPDEEGACQPCINCTHSCVDLDDKGCAPASPLASIVSAVVG 660
 Db 601 PSGVKPDLSPYMPINWKFPPDEEGACQPCINCTHSCVDLDDKGCAPASPLASIVSAVVG 660
 QY 661 ILLVVVLGVVFGILLKRRQOKIRKYMRLLOETELVEPLTPSGAMPNOAQRILKETEL 720
 Db 661 ILLVVVLGVVFGILLKRRQOKIRKYMRLLOETELVEPLTPSGAMPNOAQRILKETEL 720
 QY 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVALKVLRENTSPKANKEILDEAYVMAGVGS 780
 Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVALKVLRENTSPKANKEILDEAYVMAGVGS 780
 QY 781 YVSRLLGLCTSTVQLVTQLMFYGCLLDHVRNRRGLSQDILLNCMQIAKMSYLEDYR 940
 Db 781 YVSRLLGLCTSTVQLVTQLMFYGCLLDHVRNRRGLSQDILLNCMQIAKMSYLEDYR 940
 QY 841 LVHRDLAARNVLKSPNHHKVTDFGLARLLDDTETEHADGGKVKPKWMALESILRRRT 900
 Db 841 LVHRDLAARNVLKSPNHHKVTDFGLARLLDDTETEHADGGKVKPKWMALESILRRRT 900
 QY 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPQPCTIDVYIMVKWM 960

Db 901 HQSDVWSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
Qy 961 IDSECRPRFRELVESEFMRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
Db 961 IDSECRPRFRELVESEFMRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
Qy 1021 BEYLVPQGFPCPDPAFCAGAGWHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEG 1080
Db 1021 BEYLVPQGFPCPDPAFCAGAGWHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEG 1080
Qy 1081 AGSDVEFDGLGMAAGLQSLTHDPSPLOQRYSEDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVEFDGLGMAAGLQSLTHDPSPLOQRYSEDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NQPDVRPQPPSPREGPLPAARPAATLERAKTLSPGKNGVVKDVFAGGAVENPEYLTPO 1200
Db 1141 NQPDVRPQPPSPREGPLPAARPAATLERAKTLSPGKNGVVKDVFAGGAVENPEYLTPO 1200
Qy 1201 GGAAPQHPHPPAFSPADNLYWDDPPERGAPSTFKGTPTAENPEYGLDVEV 1255
Db 1201 GGAAPQHPHPPAFSPADNLYWDDPPERGAPSTFKGTPTAENPEYGLDVEV 1255

RESULT 14

ADM72831
ID ADM72831 standard; protein; 1255 AA.

AC ADM72831;

DT 03-JUN-2004 (first entry)

DE Human Her2/Neu protein SEQ ID NO:90.

KW epitope; epitope cluster; virucide; cytostatic; vaccine; viral infection;
KW cancer; tumour; human; Her2-Neu.

OS Homo sapiens.

PN WO2004022709-A2.

PD 18-MAR-2004.

PF 05-SEP-2003; 2003WO-US027706.

PR 06-SEP-2002; 2002US-0409123P.

PA (MANN-) MANNKIND CORP.

PI Simard JDL, Diamond DC, Liu L, Liu Z;

DR WPI; 2004-315564/29.

DR N-PSDB; ADM72832.

XX New polypeptides and encoding nucleic acids that are useful epitopes of
PT target-associated antigens, useful for diagnosing and/or treating viral
PT infections, cancers and tumors.

XX Disclosure; SEQ ID NO 90; 357pp; English.

XX The present invention describes a polypeptide (I) comprising a component
CC selected from: (a) a polypeptide epitope having any of the 503 fully
CC defined sequences of 8-33 amino acids (SEQ ID NO:108-610); (b) an epitope
CC cluster comprising the polypeptide of (a); (c) a polypeptide having
CC substantial similarity to (a) or (b); (d) a polypeptide having functional
CC similarity to any of (a)-(c); or (e) a nucleic acid encoding the
CC polypeptide of (a)-(d). (I) has virucide and cytostatic activities, and
CC can be used in vaccines. The methods and compositions of the present
CC invention are useful for the diagnosis and/or treatment of viral
CC infections, cancers and tumours. The present sequence is used in the
CC exemplification of the present invention.

XX Sequence 1255 AA;

Qy 1021 EYLVPQGFPCPDPAFCAGAGWHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEG 1080

Query Match 100.0%; Score 6812; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLRLPASPEHLDMRLHLYVQCQVQGNL 60
Db 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLRLPASPEHLDMRLHLYVQCQVQGNL 60
Qy 61 ELYLTPNASLFLQDIOEQVGVYLAHNOVROVPLRIVRGTQLFEDNYALAVLDNG 120
Db 61 ELYLTPNASLFLQDIOEQVGVYLAHNOVROVPLRIVRGTQLFEDNYALAVLDNG 120
Qy 121 DPLNNTTPVTGASPGGLRELQRLSLTEILKGGVLIQRPOLCYQDITLWKDIFHKNNQLA 180
Db 121 DPLNNTTPVTGASPGGLRELQRLSLTEILKGGVLIQRPOLCYQDITLWKDIFHKNNQLA 180
Qy 181 LTLIDNRSRACHPCSPMCKGSRGWESSEDCSLTRTVAGGCARCKGLPTDCCHQC 240
Db 181 LTLIDNRSRACHPCSPMCKGSRGWESSEDCSLTRTVAGGCARCKGLPTDCCHQC 240
Qy 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTNTDTFESMPNPEGRYTFGASCVTACP 300
Qy 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Qy 361 IQPFAGCKIFGSLAFIPESFDGDPASNTAPLOEQLOVFEETLEETGYIYISAWPDSLP 420
Db 361 IQPFAGCKIFGSLAFIPESFDGDPASNTAPLOEQLOVFEETLEETGYIYISAWPDSLP 420
Qy 421 DLSVFQNLQVIRGRIHNGAYSITLQGLGSLWGLSLRELGLSLALIHNTLHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRIHNGAYSITLQGLGSLWGLSLRELGLSLALIHNTLHLCFVHTV 480
Qy 481 PWDQLFRNPHQALLHTANRPEDCEVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDCEVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRQEC 540
Qy 541 VEBCRVLQGLPREYVNAHCLPCHPCQPONGSVTCFGEADQCAHAKYDPPFCVARC 600
Db 541 VEBCRVLQGLPREYVNAHCLPCHPCQPONGSVTCFGEADQCAHAKYDPPFCVARC 600
Qy 601 PSGVKPDLSPYMPIWKPDEEGACQPCINCTHSCVDLDDKGCAPQASPLTSTVSAVG 660
Db 601 PSGVKPDLSPYMPIWKPDEEGACQPCINCTHSCVDLDDKGCAPQASPLTSTVSAVG 660
Qy 661 ILLVWLVGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRILKETEL 720
Db 661 ILLVWLVGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRILKETEL 720
Qy 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETILDYAVMAGVSP 780
Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETILDYAVMAGVSP 780
Qy 781 YVSRLLGICLTSTVQLTQMPYGCILLDHVRENRGLSGQDILLNWCQIAKGSYLEDVR 840
Db 781 YVSRLLGICLTSTVQLTQMPYGCILLDHVRENRGLSGQDILLNWCQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNLVKSPNHVKITDFGLARLLDIDETEHADGGKVPKMALESILRRRFT 900
Db 841 LVHRDLAARNLVKSPNHVKITDFGLARLLDIDETEHADGGKVPKMALESILRRRFT 900
Qy 901 HQSDVWSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
Db 901 HQSDVWSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
Qy 961 IDSECRPRFRELVESEFMRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
Db 961 IDSECRPRFRELVESEFMRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020

Db 1021 EEYLVQQGFCDPAPGAGMVHRRSSITSGGGDLTLGLEPSEEARPSPLAPSEG 1080
QY 1081 AGSDVFDGLGMAAGKQLSLPHDPSPLQRYSEDPTVPLPSTDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMAAGKQLSLPHDPSPLQRYSEDPTVPLPSTDGYVAPLTCSPQPEYV 1140
QY 1141 NOPDVQPQPSREGPLPAARPAGATLERAKTSLPGKNGVVKDVFAPGGAIVENPEYLTQ 1200
Db 1141 NOPDVQPQPSREGPLPAARPAGATLERAKTSLPGKNGVVKDVFAPGGAIVENPEYLTQ 1200
QY 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPPERGAPPSTFKGTPTAENPEYLGLDVPV 1255
Db 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPPERGAPPSTFKGTPTAENPEYLGLDVPV 1255

RESULT 15
ADO2009
ID ADO20009 standard; protein; 1255 AA.
XX
AC ADO20009;
XX
DT 12-AUG-2004 (first entry)
XX
DE Human PRO polypeptide #460.
XX
KW Human; PRO; immune related disorder; systemic lupus erythematosus;
KW rheumatoid arthritis; osteoarthritis; juvenile chronic arthritis;
KW systemic sclerosis; Sjogren's syndrome; vasculitis; sarcoidosis;
KW autoimmune haemolytic anaemia; autoimmune thrombocytopenia; thyroiditis;
KW diabetes mellitus; renal disease; demyelinating disease;
KW central nervous system; peripheral nervous system;
KW demyelinating polyneuropathy; Guillain-Barre syndrome;
KW chronic inflammatory demyelinating polyneuropathy.
XX
OS Homo sapiens.
XX
PN WO2004043361-A2.
XX
PD 27-MAY-2004.
XX
PF 06-NOV-2003; 2003WO-US035268.
XX
PR 08-NOV-2002; 2002US-0425235P.
XX
PA (GETH) GENENTECH INC.
XX
PI Fong S, Dennis K, Clark H, Chiu H, Schoenfeld J, Williams PM;
PI Wood WI, Wu TD;
XX
DR WPI; 2004-420067/39.
DR N-PSDB; ADO20008.
XX
PT Novel PRO polypeptide e.g., PRO69614, PRO71106, or PRO86388 useful for
PT treating an immune related disorder such as systemic lupus erythematosus,
PT rheumatoid arthritis, osteoarthritis, juvenile chronic arthritis or
PT spondyloarthritis.
XX
PS Claim 7; SEQ ID NO 920; 1731pp; English.
XX
CC The invention relates to human PRO polypeptides and the polynucleotides
CC encoding them. The polypeptides and polynucleotides are useful for
CC treating and diagnosing immune related disorders in mammals. The immune
CC related disorders include systemic lupus erythematosus, rheumatoid
CC arthritis, osteoarthritis, juvenile chronic arthritis, systemic
CC sclerosis, Sjogren's syndrome, vasculitis, sarcoidosis, autoimmune
CC haemolytic anaemia, autoimmune thrombocytopenia, thyroiditis, diabetes
CC mellitus, immune-mediated renal disease, demyelinating diseases of the
CC central or peripheral nervous system, demyelinating polyneuropathy,
CC Guillain-Barre syndrome and chronic inflammatory demyelinating
CC polyneuropathy. This sequence represents a human PRO polypeptide of the
CC invention.
XX

SQL Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLALLPGGAASCTGTGDMKRLRASPETHLDMRLHLYQSCVVQGNL 60
Db 1 MELAALCRWGLLALLPGGAASCTGTGDMKRLRASPETHLDMRLHLYQSCVVQGNL 60
QY 61 ELTYLPTNASLSFLQDIQEVQYVLIAHNQVQLRLRIVRGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQYVLIAHNQVQLRLRIVRGTQLFEDNYALAVLDNG 120
QY 121 DPLNNTTPTVGASPGGLRELQRLSITLILKGGVLTORNPOLCYQDTILWKDIFHKNNQLA 180
Db 121 DPLNNTTPTVGASPGGLRELQRLSITLILKGGVLTORNPOLCYQDTILWKDIFHKNNQLA 180
QY 181 LTLIDTNRSRACHPCSPCKGSRGWESSEDCQSILTRTVACGACARCKGPLPTDCCHQC 240
Db 181 LTLIDTNRSRACHPCSPCKGSRGWESSEDCQSILTRTVACGACARCKGPLPTDCCHQC 240
QY 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHLNQSVTAEDGTORCEKSKPCARVCYGLGMEHLREVRATVSAN 360
Db 301 YNYLSTDVGSCTLVCPHLNQSVTAEDGTORCEKSKPCARVCYGLGMEHLREVRATVSAN 360
QY 361 IQEFGAGCKIFGSLAFLPESFDGDPASNTAPLQPOLQVFETLEETIGLYLISAWPDSLP 420
Db 361 IQEFGAGCKIFGSLAFLPESFDGDPASNTAPLQPOLQVFETLEETIGLYLISAWPDSLP 420
QY 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGRLSRLFELSGSLALIHNNTHLFCVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGRLSRLFELSGSLALIHNNTHLFCVHTV 480
QY 481 PWDQLFRNPHQALLHTANRPECEVGEGLACHQLCARGHCWGPGTQCVCNCSQFLRGQEC 540
Db 481 PWDQLFRNPHQALLHTANRPECEVGEGLACHQLCARGHCWGPGTQCVCNCSQFLRGQEC 540
QY 541 VEECRVLOGLPREYVNAHCLPCHPECOPOGNSVTCFGEADQCVACAHYKDPFPCVARC 600
Db 541 VEECRVLOGLPREYVNAHCLPCHPECOPOGNSVTCFGEADQCVACAHYKDPFPCVARC 600
QY 601 PSGVKPDLSTYMPIMKFPDDEGACQPCPINCSTHSCVDLDDKGCPEAQASPLTSIVSAVVG 660
Db 601 PSGVKPDLSTYMPIMKFPDDEGACQPCPINCSTHSCVDLDDKGCPEAQASPLTSIVSAVVG 660
QY 661 ILLVVVLGVVFGILIKRROOKIRKYMRLLOETELVEPLTPSGAMPNQAQMRILKETEL 720
Db 661 ILLVVVLGVVFGILIKRROOKIRKYMRLLOETELVEPLTPSGAMPNQAQMRILKETEL 720
QY 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVGSF 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVGSF 780
QY 781 YVSRLLIGICLTSTVQLVTLQMPYGCGLLDHVRNRRGLGSDQLLNMCQIAGKMSYLEDVR 840
Db 781 YVSRLLIGICLTSTVQLVTLQMPYGCGLLDHVRNRRGLGSDQLLNMCQIAGKMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDRLGLARLLDDTEYHADGKVPKKNWALESIILRRRT 900
Db 841 LVHRDLAARNVLKSPNHVKITDRLGLARLLDDTEYHADGKVPKKNWALESIILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKYDGPAREIPDLLEKGERLPQPPICITDVMYIMVKCWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKYDGPAREIPDLLEKGERLPQPPICITDVMYIMVKCWM 960
QY 961 IDSECRPRFRELVSFSSRNARDPQRFVVIQNEBGLGASPLDSTFYRSLLEDDMDGLVDA 1020
Db 961 IDSECRPRFRELVSFSSRNARDPQRFVVIQNEBGLGASPLDSTFYRSLLEDDMDGLVDA 1020

Qy	1021	EEYLVQGGFCPPDPAPCAGGMVHHRSSSTRSGGDLTLGLEPSEEEAPRSPAPSEG	1080
Db	1021	EEYLVQGGFCPPDPAPCAGGMVHHRSSSTRSGGDLTLGLEPSEEEAPRSPAPSEG	1080
Qy	1081	AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV	1140
Db	1081	AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV	1140
Qy	1141	NQPDVRQPPSPREGPLPAARPAGATLERAKTILSPGKNGVVKDVAFGGAVENPEYLTPO	1200
Db	1141	NQPDVRQPPSPREGPLPAARPAGATLERAKTILSPGKNGVVKDVAFGGAVENPEYLTPO	1200
Qy	1201	GGAAPQHPPPPAFSPAFDNLYYWDQPPPERGAPSTFKGTPTAENPEYLGLDVFPV	1255
Db	1201	GGAAPQHPPPPAFSPAFDNLYYWDQPPPERGAPSTFKGTPTAENPEYLGLDVFPV	1255

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Job time : 138.725 secs

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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:16:15 ; Search time 36.1624 Seconds
(without alignments)
3277.960 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255

Perfect score: 6694

Sequence: 1 QVCTGTDMLRLPASPETHL.....TPKGTPTAENPEYLGLDVVP 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79.*

1: PIR1.*

2: PIR2.*

3: PIR3.*

4: PIR4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6688	99.9	1255	1 A24571	protein-tyrosine k
2	5894.5	88.1	1254	1 T48161	p-185 precursor -
3	5889	88.0	1260	1 TVRTNU	protein-tyrosine k
4	3157	47.2	1210	1 GQHUE	epidermal growth f
5	3134	46.8	1210	2 A53183	epidermal growth f
6	3118.5	46.6	1223	1 TVCHLV	epidermal growth f
7	2999.5	44.8	1308	2 A47253	epidermal growth f
8	2695	40.3	1166	1 S06142	protein-tyrosine k
9	2427.5	36.3	1342	2 A36223	kinase-related tra
10	2344	35.0	1339	2 JC4387	epidermal growth f
11	1766.5	26.4	698	1 TVFVLV	protein-tyrosine k
12	1703	25.4	604	1 TVYUHV	protein-tyrosine k
13	1652.5	24.7	1330	1 GOFPEE	epidermal growth f
14	1647	24.6	544	2 S35745	protein-tyrosine k
15	1640	24.5	545	2 S00727	kinase-related tra
16	1623	24.2	540	2 B44776	protein-tyrosine k
17	1621	24.2	540	1 TVFVEB	protein-tyrosine k
18	1525.5	22.8	644	2 A36325	epidermal growth f
19	1302	19.5	1323	2 E88257	protein let-23 [im
20	1302	19.5	1374	2 S70712	protein-tyrosine k
21	1214	18.1	1369	2 S70713	protein-tyrosine k
22	1177	17.6	1717	1 A45558	epidermal growth f
23	1152.5	17.2	527	2 A42032	epidermal growth f
24	997.5	14.9	843	2 A27131	epidermal growth f
25	806.5	12.0	346	2 S13807	protein-tyrosine k
26	784.5	11.3	346	2 S13808	protein-tyrosine k
27	720.5	10.8	1363	2 T43220	insulin-like growt
28	716	10.7	1382	1 INHUR	insulin receptor p
29	708.5	10.6	1372	2 A34157	insulin receptor p

ALIGNMENTS

RESULT 1

A24571

protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human

N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein erb

C;Species: Homo sapiens (man)

C;Date: 25-Oct-1987 #sequence revision 06-Dec-1996 #text change 09-Jul-2004

C;Accession: A24571; A25491; A4188; B4188; I59509; I57622

R;Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Saito, T.;

Nature 319, 230-234, 1986

A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth

A;Reference number: A24571; MUID:86118663; PMID:3003577

A;Accession: A24571

A;Molecule type: mRNA

A;Residues: 1-1255 <I>AM>

A;Cross-references: UNIPROT:P04626; GB:X03363; NID:G31197; PIDN:CAA27060.1; PID:G31198

R;Semba, K.; Kamata, N.; Toyoshima, K.; Yamamoto, T.

Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1985

A;Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epider

A;Reference number: A25491; MUID:86016729; PMID:2995967

A;Accession: A25491

A;Molecule type: DNA

A;Residues: 737-1031 <SEM>

A;Cross-references: GB:M11767; NID:G182163; PIDN:AAA35808.1; PID:G553282

R;Coussens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg,

Science 230, 1132-1139, 1985

A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chromo

A;Reference number: A44188; MUID:86070181; PMID:2999974

A;Accession: A44188

A;Molecule type: DNA

A;Residues: 740-910 <COU1>

A;Cross-references: GB:M12036; NID:G183988; PIDN:AAA35978.1; PID:G183989

A;Accession: B44188

A;Molecule type: mRNA

A;Residues: 1-517, 'RALL', 522, 'S', 524-654, 'V', 656-1169, 'A', 1171-1255 <COU2>

A;Cross-references: GB:M11730; NID:G183986

R;King, C.R.; Kraus, M.H.; Aaronson, S.A.

Science 229, 974-976, 1985

A;Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma.

A;Reference number: I59509; MUID:85272597; PMID:2992089

A;Accession: I59509

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 832-909 <REX>

A;Cross-references: GB:L29395; NID:G459807; PIDN:AAA35809.1; PID:G459808

R;Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schleisinger, J.; Givol, D.

Mol. Cell. Biol. 7, 2597-2601, 1987

A;Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptiona

A;Reference number: I57622; MUID:87286898; PMID:3039351

A;Accession: I57622

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-191 <TAL>

A;Cross-references: GB:M16792; NID:g183983; PIDN:AAA58637.1; PID:g553332
C;Comment: Amplification and overexpression of this erbB-related gene occurs in about 30
C;Genetics:
A;Gene: GDB:ERBB2; NGL; NEU; HER-2
A;Cross-references: GDB:120613; OMIM:164870
A;Map position: 17q21.1-17q21.1
A;Introns: 25/1; 75/3; 147/1; 883/3
A;Note: the list of introns is incomplete
C;Function:
A;Description: catalyzes the phosphorylation of a peptidyl tyrosine residue by ATP
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phosphotyrosine
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-1255/Product: protein-tyrosine kinase erbB2 #status predicted <MAT>
F;22-653/Domain: extracellular #status predicted <EXT>
F;70-304/Domain: EGF receptor extracellular domain repeat <BE1>
F;395-605/Domain: EGF receptor extracellular domain repeat <EE2>
F;654-675/Domain: transmembrane #status predicted <TM>
F;676-1255/Domain: intracellular #status predicted <INT>
F;718-983/Domain: protein kinase homology <KIN>
F;726-734/Region: protein kinase ATP-binding motif
F;68,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) #status predicted
F;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;753/Active site: Lys #status predicted
F;1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)

Query Match 99.9%; Score 6688; DB 1; Length 1255;
Best Local Similarity 99.8%; Pred. No. 1.8e-270;
Matches 1230; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYLPTNASLSFLQDIOBVOGY 60
DB 24 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYLPTNASLSFLQDIOBVOGY 83
QY 61 VLIHQNQVQVQVQLRIRVGTQQLFEDNVALVLDNGDPLNNTPTVTGASPGGLRELQLR 120
DB 84 VLIHQNQVQVQVQLRIRVGTQQLFEDNVALVLDNGDPLNNTPTVTGASPGGLRELQLR 143
QY 121 SLTEILKGGVLIQRNPOLCYQDITLWKDIFPKNNQALTLIDNTRACHPCSPMCKGSR 180
DB 144 SLTEILKGGVLIQRNPOLCYQDITLWKDIFPKNNQALTLIDNTRACHPCSPMCKGSR 203
QY 181 CWGESSEDCQSLRTTVCAGCARCKGPLEPTDCCHQCAAGCTGPKHSDCLACLFHNSGI 240
DB 204 CWGESSEDCQSLRTTVCAGCARCKGPLEPTDCCHQCAAGCTGPKHSDCLACLFHNSGI 263
QY 241 CELHCPALVTYNTDTFESMPNPGRYTFGASCVTACPNYLSLTDVGSCTLVCPPLHNOEVT 300
DB 264 CELHCPALVTYNTDTFESMPNPGRYTFGASCVTACPNYLSLTDVGSCTLVCPPLHNOEVT 323
QY 301 AEDGTORCEKSKPCARVCYGLGWEHLREVRVTSANIQEFACKKIFGSLAFLPESFDG 360
DB 324 AEDGTORCEKSKPCARVCYGLGWEHLREVRVTSANIQEFACKKIFGSLAFLPESFDG 383
QY 361 DPASNTAPLOPELOQVFETLEETGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYSL 420
DB 384 DPASNTAPLOPELOQVFETLEETGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYSL 443
QY 421 TLQGLGTSWLGSLRLSRLGSLALIHNNHLCFVHVTPWDPQLFRNPQHALLHTANPEDE 480
DB 444 TLQGLGTSWLGSLRLSRLGSLALIHNNHLCFVHVTPWDPQLFRNPQHALLHTANPEDE 503
QY 481 CVGEGLACHQLCARGHCWGPGTQCVCNCSOFLRGQCEBCECRVLQGLPREYNARHCLPC 540
DB 504 CVGEGLACHQLCARGHCWGPGTQCVCNCSOFLRGQCEBCECRVLQGLPREYNARHCLPC 563
QY 541 HPESCQPNQSVTCFGEADOCVACAHKOPPCFVACPSGKPDLSYMPYIWKPPDEGAC 600
DB 564 HPESCQPNQSVTCFGEADOCVACAHKOPPCFVACPSGKPDLSYMPYIWKPPDEGAC 623
QY 601 QPCPINCTHSCVDLDDKGCFAEQASPLTSISAVVGILLVVLGVVFGILLIKRROQKIR 660

DB 624 QPCPINCTHSCVDLDDKGCFAEQASPLTSISAVVGILLVVLGVVFGILLIKRROQKIR 693
QY 661 KYTMRLLQETELVEPLTPSGAMPNQAOQMRILKETELRKVKVLGSGAGFTGVYKGIWIPDG 720
DB 684 KYTMRLLQETELVEPLTPSGAMPNQAOQMRILKETELRKVKVLGSGAGFTGVYKGIWIPDG 743
QY 721 ENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVQSPYVSRLLIGLICITLSTVQLVTQLMFY 780
DB 744 ENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVQSPYVSRLLIGLICITLSTVQLVTQLMFY 803
QY 781 GCLLDHVRNRRGLSQDILLNCMOTAKGMSYLEDVRLVHRDLAARNVLKSPNHHVKTID 840
DB 804 GCLLDHVRNRRGLSQDILLNCMOTAKGMSYLEDVRLVHRDLAARNVLKSPNHHVKTID 863
QY 841 FGLARLLDIDETEHADGGKVPFKWMALESILRRRPTHQSDVMSYGVTVWELMTFGAKPY 900
DB 864 FGLARLLDIDETEHADGGKVPFKWMALESILRRRPTHQSDVMSYGVTVWELMTFGAKPY 923
QY 901 DGIPAREIDILEKGERLPPQPICTIDVTYMWKWMIDSECRPRELVSFERNVARDP 960
DB 924 DGIPAREIDILEKGERLPPQPICTIDVTYMWKWMIDSECRPRELVSFERNVARDP 983
QY 961 QRFVWIONEDLGPASPLDSTFYRSLLDDEDDMDGLVDAEYLVPOQGFPCDDPAPGAGMV 1020
DB 984 QRFVWIONEDLGPASPLDSTFYRSLLDDEDDMDGLVDAEYLVPOQGFPCDDPAPGAGMV 1043
QY 1021 HHRHSSSTRSGGDLTLGLEPSESEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1080
DB 1044 HHRHSSSTRSGGDLTLGLEPSESEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1103
QY 1081 HDPSPLQRYSEPTVPLPSETDGYVAPLTCSPQEVYVNPQVRRPQPPSPREGPLPAARPA 1140
DB 1104 HDPSPLQRYSEPTVPLPSETDGYVAPLTCSPQEVYVNPQVRRPQPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTSLSPKNGVKDVFAGGAVENPEYLTPOGGAAPQHPPPAFSAFDNLYYW 1200
DB 1164 GATLERAKTSLSPKNGVKDVFAGGAVENPEYLTPOGGAAPQHPPPAFSAFDNLYYW 1223
QY 1201 QDQPPERGAPPTFKGTPTAENPEYLGDPV 1232
DB 1224 QDQPPERGAPPTFKGTPTAENPEYLGDPV 1255

RESULT 2

I48161

p-185 precursor - golden hamster

C;Species: Mesocricetus auratus (golden hamster)

C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004

C;Accession: I48161

R;Nakamura, T.; Ushijima, T.; Ishizaka, Y.; Negao, M.; Arai, M.; Yamazaki, Y.; Ishikawa

Gene 140, 251-255, 1994

A;Title: Cloning and activation of the Syrian hamster neu proto-oncogene.

A;Reference number: I48161; MUID:94193007; PMID:7908275

A;Accession: I48161

A;Status: preliminary; translated from GB/EMBL/DBJ

A;Molecule type: mRNA

A;Residues: 1-1254 <RES>

A;Cross-references: UNIPROT:O60553; GB:D16295; NID:G493236; PIDN:BAA03801.1; PID:G74759

C;Genetics:

A;Gene: neu

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP

F;718-983/Domain: protein kinase homology <KIN>

F;726-734/Region: protein kinase ATP-binding motif

Query Match 88.1%; Score 5894.5; DB 2; Length 1254;

Best Local Similarity 87.7%; Pred. No. 1.5e-237;

Matches 1081; Conservative 57; Mismatches 93; Indels 1; Gaps 1;

QY 1 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYLPTNASLSFLQDIOBVOGY 60

DB 24 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYLPTNASLSFLQDIOBVOGY 83

A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DNA
R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.; Der, C.J.
Cell 59, 33-43, 1989

A;Title: Functional independence of the epidermal growth factor receptor from a domain
A;Reference number: A33331; MUID:90002233; PMID:12790960

A;Comments: annotation; internalization signal

C;Comment: Binding of EGF to the receptor leads to internalization of the EGF-receptor
C;Genetics:

A;Gene: GDB:EGFR

A;Cross-references: GDB:120610; OMIM:131550

A;Map position: 7p12.3-7p12.1

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho

F;1-24/Domain: signal sequence #status predicted <SIG>

F;25-1210/Product: EGF receptor #status predicted <MAT>

F;75-645/Domain: extracellular #status predicted <EXT>

F;7390-300/Domain: EGF receptor extracellular domain repeat <EB1>

F;646-668/Domain: transmembrane #status predicted <TM>

F;710-975/Domain: intracellular #status predicted <INT>

F;718-726/Region: protein kinase homology <KIN>

F;999-1046/Region: coated-pit mediated internalization signal

F;1047-1210/Region: inhibitory

F;128,175,352,413,444,528,603/Binding site: carboxyrate (Asn) (covalent) #status predic

F;745/Active site: Lys #status experimental

Query Match 47.28; Score 3157; DB 1; Length 1210;

Best Local Similarity 49.94; Pred. No. 5.66-124;

Matches 624; Conservative 178; Mismatches 144; Indels 104; Gaps 20;

QY 1 QVCTGTDMKLRLPASPETHLMDLRHLYQGVQVQGNLELTVLPNLSLFLQDIQEOGY 60

DB 29 KVCQSTNSKLTOLGTFEDHFLSLQRMFNCEVLGNLEITYVQRYDLSFLKTIQEVAGY 88

QY 61 VLIANNQVQVFLORLIVRGTLQFEDYALAVLDNGDPLNNTPTVTSFGGLRELQLR 120

DB 89 VLIANTVVERIPLENLQIIRGNMYENYALAVLSNYD-----ANKTGLKELPMR 138

QY 121 SLTEILKGGVLIQNPOLCYQDTLWKDIIFHKNQLALTLDITNRSACHPCSPMKGSR 180

DB 139 NLOEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSMDQNHLSGCQKCPSCNGS 198

QY 181 CWGESSEDCOSLTRVTCAGGCA-RCKGLPTDCHECAAGCTGPKHSDCLACLFHNSG 239

DB 199 CWGAGEENCQKLTIIICAQCSGRCRCKSPDCHQCAAGCTGPRSDCLVCKEKFDEA 258

QY 240 ICELHCALVYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTVDGSCITLVCPLHNQEV 299

DB 259 TCKDTCPLMLNPTTYQMDVNPBGKYSFGATCVKCPRYVWTDHSCVRCAGGADSYEM 318

QY 300 TAEDGTORCEKCKPCARVCYGLGMHLREVRVATSNIOEFAGCKKIFGSLAFLEPSFD 359

DB 319 -BEDGVKCKKCEGFCRKNVNGIGIFGKDSLSNATNIRHFNCTSIISGLHLPLVAFR 377

QY 360 GDPASNTAPLOEQLOVFETLEETITGYLYISAWPDSLPLDSVFONQVIRILHNGAYS 419

DB 378 GDSFTPTPLDPQELDILKTVKEITGELLQAMPENRTDLHAFENLIIIRGRTKQHQFS 437

QY 420 LTQGLGISWGLRSLRELSGGLAIHHNTHLCFVHTVPMDQLFRNPQHALLHTANRPED 479

DB 438 LAVVSLNITSLSRLSLKEISDGVIIISGNKNLCYANTINMKKLPFTSGQTKIISNRGEN 497

QY 480 ECVGEGGLACHQLCARGHCWGGPGTQCVCNCSQFLRGQECVCECRVLQGLPREYNARCLP 539

DB 498 SKRATGQVCHALCSPEGCWGPEDRDCVSRNVRGECVCKLLEGEPRFEVNSNCIQ 557

QY 540 CHPECQFQNGSVTCFGEADQCAVHYKDPFFCVARCPSCVKPDLSPMTWPFDEGA 599

DB 558 CHPECLFQAMNITCTGRPDNCIOCAHYIDGPHCVKTCIPAGWGENNTL-VWKYADAGHV 616

QY 600 CQCPFINCTHSCVDLDDKGCFAEQRASPLTSIVSAVVG---ILLVVVLGVVFGILIKRRQ 656

DB 617 CHLCHPNCTGCTGPGLEGCTNGPKIP--SIATGMVGALLLLLVVALGIG---LFRMR 671

QY 657 QKIRKYTMRELLQSTELVEPLTSGAMPNQAOQRILKETELRKVKVLGSGAFGVYKGIW 716

DB 672 HIVKRTLRRLQERRELVPLTSGEAPNQALRIKETEPFKIKVLGSGAFGVYKGLW 731

QY 717 IPDGENVKIPVAIKVLRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVLTQ 776

DB 732 IPSEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLITQ 791

QY 777 LMPYGCLLDHVRNRRGLSGODLLNMQOIAKMSYLEDLVLRVHRLAARNVLKSNHV 836

DB 792 LMPFGCLLDYVRHKONISQYLLNMCVQIAKGNYLEDLRLVHRLAARNVLKTPQHV 851

QY 837 KITDFGLARLLDDETEYHADGKVPKIMWALSILRRRTHQSDVMSYGVYVWELMTFG 896

DB 852 KITDFGLAKULGAEEKYHAEGGKVPKIMWALSILHRIYTHQSDVMSYGVYVWELMTFG 911

QY 897 KYDYGIPAREIPDLLEKGERLPQPICTIDVTVMVWKWIMIDSECRPFRELVSFERSM 956

DB 912 SKPYDGIPIASEISSILEKGERLPQPICTIDVTVMVWKWIMIDADSRPFRELIIERSKM 971

QY 957 ARDPQRFVITQ-NEDIGPASPLDSTFYRSILLEDDMGDLVDABEYLVPQGGFPCCDPAPG 1015

DB 972 ARDPQRYLVIQGDREHMLPSPTDSNFYRALMDEEDMDVDVDADEYLTPQGGFF----- 1024

QY 1016 AGGMVHRRSSSTRSGGDLTLGLPSEEEPRSLAPSEGAGSDVFDGLGMAAKGL 1075

DB 1025 -----SSPSTRTPLLSLSLTSN--NSTVACIDRNL 1055

QY 1076 QSLPTHDPSPLQRYSDPTVPLPSET--DGYVAPLTCSPQPYVYNQPDVFPQPSREGP 1133

DB 1056 QSCPIKEDSFLQRYSDPTGALTEDSIDDTFL-----PVPEYINQ-SVPRPAGSVQNP 1108

QY 1134 LPAARPAATLERAKTILSPGKNGVVDVFAFGGAVENPEYL-TPQGGAAQPHPPAPFSP 1192

DB 1109 VYHNQPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149

QY 1193 AFONLYYWDQ-----DP-----PERGAPPSTFKGTPTAENPEYL 1226

DB 1150 TFDSPAHWAQGHQSLDNPDYQQDFPFKEAKPNIGIFKGS-TAENAEYL 1198

RESULT 5

A53183

epidermal growth factor receptor precursor - mouse

C;Species: Mus musculus (house mouse)

C;Date: 06-Jan-1995 #sequence revision 06-Jan-1995 #text change 09-Jul-2004

C;Accession: A53183; A43818; S24942; A28941; S45325; I49643

R;Luetteke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, H.S.; Jenkins, N.A.;

Genes Dev. 8, 399-413, 1994

A;Title: The mouse waved-2 phenotype results from a point mutation in the EGF receptor
A;Reference number: A53183; MUID:94170986; PMID:8125255

A;Accession: A53183

A;Molecule type: mRNA

A;Residues: 1-1210 <LUE>

A;Cross-references: UNIPROT:Q01279; GB:U03425

R;Avivi, A.; Lax, I.; Ullrich, A.; Schlessinger, J.; Givol, D.; Morse, B.

Oncogene 6, 673-676, 1991

A;Title: Comparison of EGF receptor sequences as a guide to study the ligand binding si

A;Reference number: A43818; MUID:91232866; PMID:2030916

A;Accession: A43818

A;Molecule type: mRNA

A;Residues: 1-714 <AVI>

A;Cross-references: GB:X59698

R;Eisinger, D.P.; Serrero, G.

submitted to the EMBL Data Library, June 1992

A;Reference number: S24942

A;Accession: S24942

A;Molecule type: mRNA

A;Residues: 969-971, 'K', 973-1115, 'D' <EIS>

A;Cross-references: EMBL:Z12608

R;Heisermann, G.J.; Gill, G.N.

J. Biol. Chem. 263, 13152-13158, 1988
 A;Title: Epidermal growth factor receptor threonine and serine residues phosphorylated
 A;Reference number: A28941; MUID:88330814; PMID:3138233
 A;Accession: A28941
 A;Molecule type: protein
 A;Residues: 689-694, 'X', 696-704, 'L', 706-707, 989-992, 'XX', 995-996, 'X', 998-1000, 1002-1009, R;Hibbs, M.L.; Dunn, A.R.; Alexander, W.S.
 A;Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor submitted to the EMBL data library, April 1994
 A;Reference number: S45325
 A;Accession: S45325
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-971, 'K', 973-1210 <VER>
 A;Cross-references: EMBL:X78987; NID:G488830; PIDN:CAA55587.1; PID:G488831
 R;Paria, B.C.; Das, S.K.; Andrews, G.K.; Dey, S.K.
 Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
 A;Title: Expression of the epidermal growth factor receptor gene is regulated in mouse B
 A;Reference number: I49643; MUID:93126380; PMID:7678348
 A;Accession: I49643
 A;Status: translated from GB/EMBL/DDBJ
 A;Molecule type: mRNA
 A;Residues: 12-20, 22-132 <RES>
 A;Cross-references: GB:L06864; NID:G193001; PIDN:AAA53029.1; PID:G567201
 C;Genetics:
 A;Gene: EGFR
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphoprotein
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;648-670/Domain: transmembrane #status predicted <TM>
 F;712-977/Domain: protein kinase homology <KIN>
 F;720-728/Region: protein kinase ATP-binding motif
 F;680,695/Binding site: phosphate (Thr) (covalent) #status experimental
 F;697,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental
 F;933/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental
 F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental
 F;1197/Binding site: phosphate (Tyr) (covalent) #status experimental

Query Match 46.8%; Score 3134; DB 2; Length 1210;
 Best Local Similarity 49.9%; Pred. No. 5e-123;
 Matches 627; Conservative 170; Mismatches 352; Indels 108; Gaps 22;

Qy	1	QVCTGTDMLRLPASPTHTLMLRLHYQGVQVQGNLELYLPNTASLSFLQDIQVQVQY 60
Db	29	KVCGTSENRLTQGTDFHFLSLQRYNCEVVLGNLEITYVQVNDLFLTKTIQVAGY 88
Qy	61	VLIAHNVQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 120
Db	89	VLIANTVTRIFLENLQIRGNALYENTYALALSN-----YGTNRTGLRELPMR 138
Qy	121	SLTEILKGVGLIQRNPOLCVQDTILWKDI-----FHKNQLALTLIDNRSACHPCSPMC 176
Db	139	NLOBILIGAVRFSNNPILCNMTDITQWRDIVQNVFMSNMDL-----QSHFSSCPKCDPSC 194
Qy	177	KGSCWGESSEDCOSLRTRVCAGCA-RCKGPLPTDCCHQCAAGCTGPKHSDCLACLFH 235
Db	195	PNGSCWGGGNCCKLKIICAQCCHRCGRSPSDCHNQCAAGCTGPRSDCLVCQKF 254
Qy	236	NHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPNYLYSTDVGSCTLVCPPLH 295
Db	255	QDEATCKDTCPLMLXNPTTYQMDVNPGEKYSGFATCVKCPRYVYVTDHSGCVACGPD 314
Qy	296	NQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSANTOEFAGCKKIFGSLAFLP 355
Db	315	YYEV-EBDGIKCKKCDGCPKVCNCGIGEGFEDTLINATNINHKFYKTAISGDLHLP 373
Qy	356	ESFDGDFASNTAPLQPELOQVFTEBITGLYISAWPDSLPDLSVFNQLVIRGRILHN 415
Db	374	VAFKGDSTRPPLDPRLEILKTVKEITGLTGLLQAMPDNDWDLHAFENLEIRGRKQH 433
Qy	416	GAYSILTLQGLISWGLRSLRELQSLALIHNTHLFCVHTVPMQDLFRPHQALLHTAN 475
Db	434	QQFSLAVVGLNITSLGLRSLKEISDGDVITSGNRLCYANTINWKKLFGTPNQKTKIMN 493

Qy	476	RPEDCVGEGLACHQICARGHCWGPPTQCVNCSQFLRGQECVECRVLQGLPREYVNA 535
Db	494	RAEKDCKAVNHVNCPLCSSEGCWGPBRDCVQNSGRGECVCKNLCILGEPREFVENS 553
Qy	536	HCLFCHPECPQNGSVTCFPEADQCVCACAHYKDPFCFCVACRCPGSKVPLSYMPIMKPPD 595
Db	554	ECIQHFECLPQAMNITCTGRGPDNCIQCAHYIDGPHCVKTCPCAGINGENNTL-VKMYAD 612
Qy	596	BEGACQCPINCTHSCVDLDDKQCPABORASPLTSIVSAVVGILLVVLGVVFGI-LIKR 654
Db	613	ANNVCHLCHANCTYGCAGPLQGCCEVMPSGPKPSIATGIVGGLLFIWV-VALGIGLFMR 671
Qy	655	ROQIRKVTMRLLQFTELVEPLTPSGAMPNOAOWRIILKETELKRVKVLGSGAGTGVYKG 714
Db	672	RHRIVRKTRRLLOERELVEPLTPSGAPNOAHLRIKETFKKIKVLGSGAGTGVYKG 731
Qy	715	IWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYVAVGSGSPVSRLLGICLTSTVOLV 774
Db	732	LWIPEGEKVKIPVAIKELREATSFRANKEILDEAYVAVASVDNPHVCRLLGICLTSTVOLV 791
Qy	775	TQLMPYGLLDHVRNRRGLSQDLLNWCMIAGKMSYLEVRLVHRDLAARNVLKSPN 834
Db	792	TQLMPYGLLDYVREHKDNIQSOLLANWCMIAGKMSYLEVRLVHRDLAARNVLKTPQ 851
Qy	835	HVKITDFGLRLDIDETEHADGKVPKWKMALESILRRRFTHQSDVWSYGVTVWELMT 894
Db	852	HVKITDFGLRLDIDETEHADGKVPKWKMALESILRRRFTHQSDVWSYGVTVWELMT 911
Qy	895	FGAEPYDGIPIAREIPDLLEKGERLPQPPICITDVMIMVKCMIDSECRPRELVSFBS 954
Db	912	FGSGPYDGIPIAREIPDLLEKGERLPQPPICITDVMIMVKCMIDSECRPRELVSFBS 971
Qy	955	RMARPPQRFVIO-NEDLGPASPLDSTYRSILLEDDMGDLVDAEYLVPOQGFPCDPA 1013
Db	972	QMARPPQRFVIO-NEDLGPASPLDSTYRSILLEDDMGDLVDAEYLVPOQGFPCDPA 1026
Qy	1014	PGAGMWHHRHSSTRSGGDLTLGLEPSEBEEAPRSLAPSEAGSDVDFDGLMGAAK 1073
Db	1027	PGAGMWHHRHSSTRSGGDLTLGLEPSEBEEAPRSLAPSEAGSDVDFDGLMGAAK 1053
Qy	1074	GLQSLPTHTDPSLPORYSEDPVPLPSET-DGYVAPLTCSPQPEYVQPDVPRQPPSPRE 1131
Db	1054	RNGSCRKVEDAPLQRYSSDPTGAVTEDNIDDAFL-----PVPEYVQ-SVPKRPAGSVQ 1106
Qy	1132	GPLPAARPAAGATLERAKTILSPCKNGVVKDVFAGGAVENPEYL-TPQGAAPQPHPPAF 1190
Db	1107	NPVYHNQPLHP-----APGRDLHYQN--PHSNAVGNPEYLNTAQ-----PTCL 1147
Qy	1191	SPAFDNLYWQO-----DP-----PERGAPPSTFKGTPTAENPEYLGLDVP 1231
Db	1148	SSGFNSPALMIQKSHQMSLDNFDYQDFFPKETKPNIGFKG-PTAENAEYLRVAPP 1203

RESULT 6

TVCHLV

epidermal growth factor receptor precursor - chicken
 N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB

C;Species: Gallus gallus (chicken)

C;Date: 28-Feb-1986 #sequence revision 05-May-1995 #text_change 09-Jul-2004

C;Accession: A27720; A00643

R;Lax, I.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, A.; Vennart

Mol. Cell. Biol. 8, 1970-1978, 1988

A;Title: Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression in mo

A;Reference number: A27720; MUID:88261272; PMID:3260329

A;Accession: A27720

A;Molecule type: mRNA

A;Residues: 1-1223 <LAX>

A;Cross-references: UNIPROT:P00534; GB:M20386

R;Nilgen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, I.

Cell 41, 719-726, 1985

A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and pr

A;Reference number: A00643; MUID:85228222; PMID:2988784

A:Accession: A00643
A:Molecule type: mRNA
A:Residues: 585-1223 <NIL>
A:Cross-references: GB:M10066
C:Genetics:
A:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: alternative splicing; ATP; autophosphorylation; glycoprotein; growth factor specific protein kinase

F:1-30/Domain: signal sequence #status predicted <SIG>
F:31-1223/Product: epidermal growth factor receptor #status predicted <MAT>
F:31-654/Domain: extracellular #status predicted <EXT>
F:81-307/Domain: EGF receptor extracellular domain repeat <EB1>
F:397-610/Domain: EGF receptor extracellular domain repeat <EB2>
F:655-677/Domain: transmembrane #status predicted <TM>
F:678-1223/Domain: intracellular #status predicted <INT>
F:719-984/Domain: intracellular #status predicted <KIN>
F:727-735/Region: protein kinase homology <KIN>
F:727-735/Region: protein kinase ATP-binding motif
F:136,202,280,361,370,422,575,580,615,637/Binding site: carbohydrate (Thr) (covalent) #status predicted
F:136,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F:687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F:754/Active site: Lys #status predicted
F:1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #status predicted

Query Match 46.6%; Score 3118.5; DB 1; Length 1223;
Best Local Similarity 49.1%; Pred. No. 2.2e-122;
Matches 626; Conservative 174; Mismatches 336; Indels 139; Gaps 24;

Qy	1	QVCGTDMKRLPASPETHLDMLRHLVYQGVQVQGNLELTYLPTNASISFLDIOIEVQGY	60
Db	35	KVCGGTNNKLTQLGHVEDHFTSLQRMVNNCEVLNLEITYVEHRDLTLFKTIOEVAGY	94
Qy	61	VLIAHNVQVQPLQRLAIRVGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR	120
Db	95	VLIALNVQVDTPLENIQIIRGNVLYDSFALVLSNYH-MNKTKQ-----GLRELPMK	145
Qy	121	SLTEILKGVLIQRNPOLCYQDTILWKDIIFHKNQLALTLD-TNRSRACHPCSPMCKGS	179
Db	146	RLSEILNGVVKISNPNKLCNMDTVLWMDIITDSRK-PLTLVDFASNLSSCPKCHPNCTD	204
Qy	180	RCWGESSEDCOSLRTTVCAGCA-RCKGPLPTDCHCEOCAGCTGPKHSCLACLHNHS	238
Db	205	HCWAGSQNCOTLLTKVICAQCSGRCKGVSPDCCHNOCAAGCTGPRSDCLACRKRFD	264
Qy	239	GICELHCPALVYNTNTDFESMPNPEGRYTFGASCTACPVNYLSTDVGSCTLVCPLNQE	298
Db	265	ATCKDTCEPLVLYNPTTYQMDVNPGEKYSFGATVRCRPHYVVDTHGSCVRSNTDYE	324
Qy	299	VTABDGTQRCCKSKPCARVCYGLGMBHLREAVTSANTOEFAGCKKIFGSLAFLPESF	358
Db	325	V-ENGVRKCKKCDGLCSKVCNGIGIGELGKILSINATNIDSFNKTKINGDVSILPVAF	383
Qy	359	DGDPASNTAPLOPQLOVFLEITGYLYISAWPDSLPLSVFQNLQVTRGRIHLNGAY	418
Db	384	LGDRAFTKLPLDPKCLDVFRTVKEISGFLLIQAWPDNATDLYAFENLEIIRGTQKHQY	443
Qy	419	SLTQGLGISWGLRLSRELGSGLALTHNTHLCFVHTVPWDOLFNRPHQALLHTANRPE	478
Db	444	SLAVVNLKISGLRLSLEKESDGDIALTKWKNLICYADTMWRSILFATQSKTKIIQRNKK	503
Qy	479	DECVGEGLACHQLCARGHCWPGPTQCVNCSQFLRGQCEVCEKVLQGLPREYVNAHCL	538
Db	504	NDCTADRHVCDPLCSDDVCGWGFPGFCFRFFSRQKECVKQCQNLQGEPRERDSCKL	563
Qy	539	PCHPECCQPONG---SVTCFGEADQCVACAHYKDPFCVACRCPGVKPDLSYMPIWKFPD	595
Db	564	PCHECIVQNSSTAYNTTCSGPGPDHCKCAHFIDGPHCVKACPAVLGENDTL-VWKYAD	622
Qy	596	EEGACQPCPNCTHSCVDLDDKGCAPQRASPLTSIVSAVV-GILLVVLGVVFGILIKR	654
Db	623	ANAVCQLCHPNCTRGCKGPGLEGCP----NGSKTPSIAAGVGGLLCLVVLGILGLYLR	679
Qy	655	RQKIRKTYTWRRLQETVELVEPLTPFGAMPNQAMQIRLKETELRKVKVLGSGAFGTYKKG	714

Db 264 TCKDTCPPPKLYDISHQVNDPNIKYTFGAACVKECPNSVNVTE-GACVRSACSAGMLEV 322
Qy 300 TAEDGTORCEKSCPKPCARVYCYGLGMEHLREVRVTSANIQFAGCKIFGSLAEPLPSFD 359
Db 323 D-ENGSRCKFDGVCVKDGIIGSLNIAVNSNIRSFNCTKINGDIIILNRISFE 381
Qy 360 GDPASNTAPLOEQLQVPETLEETITGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYS 419
Db 382 GDPHYKIGTMDPEHLNMLTIVKEITGYLYIMWPNENMTSLSVFQNLQVIRGRILHNGAYS 441
Qy 420 -LTIQGLGISWGLRSLRELGLALIHNNTHLCFVHTVPHDQFLRPHQALLHTANRPE 478
Db 442 FVVQVVRHLQWGLRSLRELGLALIHNNTHLCFVHTVPHDQFLRPHQALLHTANRPE 499
Qy 479 DECVGEGLACHQLCARGHCWPGPTQCVNCSQFLRGQECVECEVLCQLPREYVNAHCL 538
Db 500 -----ENQTCNNECEDGCM-PGPTMCVSLHLVDGRGCVASCNLLQGEPREAQVDGRVCV 553
Qy 539 PCHPECPQNGSVTCFGEADQCVACAHYKDPDPPFCVACPSGVKPDLSYMPIWKFPPDEG 598
Db 554 QCHOECLVQTDLSLTCYGPANCSKAHFQDGPQCIPRCPHGILGDDGTL-INKYADKWG 612
Qy 599 ACQPCPNCTHSCVDLDDKGPACQASPLTSIYSAVVGILLVVVLGVVFGIILKRQOK 658
Db 613 QCQPCQHCNCTQCCSGPGLSGCRGD-IVSHSLAYGLVSLGLITIVIVALLIVVLLRRRIK 671
Qy 659 IRKVTMRLLQETELVEPLTPSGAMPNOAQRILKETELRKVKVLGSGAGFVYKGIWIP 718
Db 672 -RKETIRCLLOEKELVEPLTPSGAPNAQAFRIILKETEFKDRVLGSGAGFVYKGLWNP 730
Qy 719 DGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVTLQM 778
Db 731 DGENIRIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVTLQM 790
Qy 779 PYGCLLDHVRNCRGLSODLLNCKMOIAKMSVLEEDVRLVHRLAARNVLKSPNHVKI 838
Db 791 PYGCLLDVVRQBRICQGLLWNCVQIAGMNYLEERHLVHRLAARNVLKSPNHVKI 850
Qy 839 TDFGLARLLDIDETEHADGKVPKWMALLESILRRRFTHQSVDVMSYGVTVWELMTFCAG 898
Db 851 TDFGLSKLLTADKEYQADGKVPKWMALLESILQWYTHQSVDVMSYGVTVWELMTFGSK 910
Qy 899 PYDGIPAREIPDLLEKGERLPQPICTIDVTVMVCKMIDSECRPFRELVSFSRMAR 958
Db 911 PYDGIPAKEIASVLENGERLPQPICTIEVTVMILKCMIDPSRPFRELVSFSQMAR 970
Qy 959 DPQRFVITONEDLGASPLDSTFRSILLEDMDGLVDAEYLYVPOQGFPCPDAPCAGG 1018
Db 971 DPSRYLVIQG---NLPSLSDRRLFSLSDD--DVVDADYLLPYKRI----- 1014
Qy 1019 MVHHRSSSTRSGGDLTLGLEPSEBEAPRSLAPSEGAGSDVFDGLGMAAKGLQL 1078
Db 1015 -----NRQGS-----EPICPTGH----- 1028
Qy 1079 PTHDPSPLQRYSEDPV-PLPSETDGYVAPLTCSPQPEYVNPQDVRPQ-----PSPR 1130
Db 1029 PVRENSITLRNISDPTQNALEKDLGDH-----EYVNPQGETSSRLSDIYENYE 1078
Qy 1131 E-----GRLP-AARPAGATLERAKTILSPKGVGVKDVAFGCAVENPEYLTPOGGAAPQ 1184
Db 1079 DLTGWDGVPVLSQSEAEATNFSRPLYLNTNQSL----PLVSSGSDDDPDY---QAG----- 1127
Qy 1185 HPPAFSPADNLYYWDQDPRGAPSTFTKGTPTAENPEYLG 1227
Db 1128 -----YQNAF-----LPQTGALTGNGMFLPAENLEYLG 1156

RESULT 9

A36223

kinase-related transforming protein (erbB3) (EC 2.7.1.1-) precursor - human

C;Species: Homo sapiens (man)

C;Date: 04-Oct-1991 #sequence_revision 13-Jan-1993 #text_change 09-Jul-2004

C;Accession: A36223; I59164

R;Kraus, M.H.; Issing, W.; Miki, T.; Popescu, N.C.; Aaronson, S.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A;Title: Isolation and characterization of ERBB3, a third member of the ERBB/epidermal
A;Reference number: A36223; MUID:90083234; PMID:2687875
A;Accession: A36223
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-1342 <KRA>
A;Cross-references: UNIPROT:P21860; GB:M29366
R;Plozman, G.D.; Whitley, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, V.L.; Todaro, G.
Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4909, 1990
A;Title: Molecular cloning and expression of another epidermal growth factor receptor-r
A;Reference number: I59164; MUID:90311312; PMID:2164210
A;Accession: I59164
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-559, 'G', 561-957, 'F', 959-1063, 'G', 1065-1342 <RES>
A;Cross-references: GB:M34309; NID:G183990; PID:AAA35979.1; PID:G306841
C;Genetics:
A;Gene: GDB:ERBB3; HER3
A;Map position: 12q13-12q13
A;Cross-references: GDB:119880; OMIM:190151
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homol
C;Keywords: ATP; phosphotransferase
F;707-972/Domain: protein kinase homology <KIN>
F;715-723/Region: protein kinase ATP-binding motif

Query Match 36.3%; Score 2427.5; DB 2; Length 1342;
Best Local Similarity 40.8%; Pred. No. 1.2e-93;
Matches 528; Conservative 190; Mismatches 449; Indels 127; Gaps 31;
Qy 2 VCTGDMKRLPASPETHLDMLRHLYQCGQVQGNLELTYPNTNASLSFLQDIQEVQGV 61
Db 28 VCPFTLNGLSVTGDAENQYQTLKLYERCEVWGNLEIVLTGHNADLSFLQWIREVTGV 87
Qy 62 LIAHNVQVPLQRLRIVRQTQLFEDNYALVLDNGDPLANTTPTVTGASPGGLRELQLS 121
Db 88 LVANNEPSTLPLNLRVVRGTQVYDVGKFAIFVM-----LVNVT-----NSSHALRQLRLTQ 138
Qy 122 LTELKGGVLIQNPOLCYODTILWKDI FHKNQALATLIDTNRSRACHSPCKSGRC 181
Db 139 LTELKGGVVIKNDKLCHEMDTIDMRDIVDRD-----AEIVVKONGRSCPPCHCKG-RC 194
Qy 182 WGESSEDCQLSLRTVCAGG-ARCKGPLTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 195 WGPSEDCQTLTKTICAPQCNHCFGNPNQCCHDECAGCGSPQDTCFACRHFNDGSA 254
Qy 241 CELHCPALVTYNTDTFESMPNPEGRTYFGASCVTACPYNYLSTDVGSCITLVCPHNEVT 300
Db 255 CVPRCPQPLVYKLTFLQEPNPHTKYQYGVGVASCPNFEV-VDQTSVCRACPPDKMEVD 313
Qy 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRVTSANIQFAGCKIFGSLAEPLPSFDG 360
Db 314 -KNGLKMCPECGGLCKPCKACEGTSG--SRFTVDSSNIDGVFNCTKILGDLFLITGLNG 370
Qy 361 DPASNTAPLOEQLQVPETLEETITGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYS- 419
Db 371 DPHHKIPALDPEKLVNFRVTEITGYLNIQSWPHMNFVSFNLTTIGRSLYNRGFSL 430
Qy 420 LTIQGLGISWGLRSLRELGLALIHNNTHLCFVHTVPHDQFLRPHQALLHTA-NRPE 478
Db 431 LIMKLNVTSLGFSRLKEISAGRIYISANRQLCVHSLNWTKVLRLGPTERLIDIKHNR 490
Qy 479 DECVGEGLACHQLCARGHCWPGPTQCVNCSQFLRGQECVECEVLCQLPREYVNAHCL 538
Db 491 RDCVAEGKVCPLCSCGGCWPGPGQCLSCRNYSRGVCVTHCNFLNGEPREFAHEACF 550
Qy 539 PCHPECPQNGSVTCFGEADQCVACAHYKDPDPPFCVACPSGVKPDLSYMPIWKFPPDEG 598
Db 551 SCHPECPQMEGTATNGSGSDTCAQCAHFRDGHCVSSCCHGVLG--AKGPIYKYPDVQN 608
Qy 599 ACQPCPNCTHSCVDLDDKGPACQASPLTSIYSAVVGILLVVVLGVVFGIILKR 654

QY 743 EILDEAYVMAGVGVYVSRLLGLICLTSTVQLVTLQMPYGCGLLDHVRNCRGLSQDILLNW 802
Db 178 EILDEAYVMASVNDPVHVCRLGLICLTSTVQLVTLQMPYGCGLLDHVRNCRGLSQDILLNW 237
QY 803 CMQIAKMSYLEDVRLVHRDLAARNLVKSPNHVKITDFGLARLLDIDETEHADGGKVP 862
Db 238 CVQIAKGMNLEERLVRDLAARNLVKTPQHVKITDFGLAKLGADEKEYHAEGKVP 297
QY 863 IKWMALESILRRPETHQSDVMSYGVTVWELMTGAKPYDGIPIAREIPDILLEKGERLPQPP 922
Db 298 IKWMALESILHRTYTHQSDVMSYGVTVWELMTGSKPYDGIPIASEISSVLEKGERLPQPP 357
QY 923 ICTIDVMTMVKCWMIDSECRPRELVSFSESMARDPQRFVVIQ-NEDLGPASPLDSTF 981
Db 358 ICTIDVMTMVKCWMIDADSRPRFELIAEFSKWARDPPRYLVIQDGRWHLPSPYDSKF 417
QY 982 YRSLEDDDDMDGLVDAAEYLVPOQGFCDPAPAGAGVHRRHRSSTRSGGDLTLGLE 1041
Db 418 YRLMEEDMEDIVDAEYLVPHQGF-----NSPST----- 449
QY 1042 PSSEAPRSP-----APSEAGSDVFDGLGMAAKGLQSLTHDPSPLORYSEDPVP 1096
Db 450 -----SRTPLLSLSATSNSTNCID-----RNGQGHVPREDSFVQYSSDPTGN 495
QY 1097 LPSET--DGVAFLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPAGATLERAKTILSPGK 1154
Db 496 FLEESIDDDGL-----PAPEYVQ--LMPKKESTAM----- 524
QY 1155 NGVVKDVFAP-----GGAVENPEYLTPOGGAAPQHPHPPAFSPAFD 1195
Db 525 --VQNOIYFISLTATSKLPMDSRYQNSHSTAVDNPEYL-----NTNQSLAKTVFE 574
QY 1196 NLYWDDPPERGAPSTFKGTFTAENPEY 1225
Db 575 SSPYWIQSGNHQ-----INLDNPDY 594
RESULT 13
QOPEE
epidermal growth factor receptor - fruit fly (Drosophila melanogaster)
N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB
C;Species: Drosophila melanogaster
C;Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 09-Jul-2004
C;Accession: A0640; A38021
R;Iivneh, E.; Glazer, L.; Segal, D.; Schlessinger, J.; Shilo, B. Z.
Cell 40, 599-607, 1985
A;Title: The Drosophila EGF receptor gene homolog: conservation of both hormone binding
A;Reference number: A0640; MUID:85124611; PMID:2982499
A;Molecule type: DNA
A;Residues: 1-1330 <liv>
A;Cross-references: UNIPROT:P04412; EMBL:K03054
R;Wadsworth, S.C.; Vincent III, W.S.; Bilodeau-Wentworth, D.
Nature 314, 178-180, 1985
A;Title: A Drosophila genomic sequence with homology to human epidermal growth factor re
A;Reference number: A38021; MUID:85137939; PMID:2983232
A;Accession: A38021
A;Molecule type: DNA
A;Residues: 'A', 832-866, 'V', 868-943, 'QTPSLVK' <WAD>
A;Cross-references: EMBL:X02293; NID:g7922; PIDN:CAA26157.1; PID:g929565
C;Comment: This sequence is tentative because the introns have not been identified.
C;Genetics:
A;Gene: FlyBase:Egfr
A;Cross-references: FlyBase:FBgn0003731
A;Map position: 2 57F
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phosph
F;1-732/Domain: extracellular #status predicted <EXT>
F;733-764/Domain: transmembrane #status predicted <TM>
F;765-1330/Domain: intracellular #status predicted <INT>
F;808-1072/Domain: protein kinase homology <KIN>
F;816-824/Region: protein kinase ATP-binding motif
F;122,300,324,363,518,688,695,700/Binding site: carbohydrate (Asn) (covalent) #status pd

F;774/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;843/Active site: Lys #status predicted
F;1181/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #status predic
Query Match 24.7%; Score 1652.5; DB 1; Length 1330;
Best Local Similarity 29.9%; Pred. No. 1.6e-61;
Matches 413; Conservative 180; Mismatches 415; Indels 371; Gaps 39;
QY 57 VOGYVLIAHQVQVPLQRLRIVRGTOLEF-----EDNVALAVLDNGDPLNTPVTVGASP 111
Db 38 ITNYVIGLDLPCTLSVRLQIRGRTLFSLSVBEEKALFV-----TY 81
QY 112 GGLRELQRLSLTEILKGGVLIQRPOLCVODTILKQDIFHKNNQLALTLDITNRSRACHP 171
Db 82 SKQYTLIEPDLRDVLNGQVGFNNNLCHMTIQNSEIVSNGTDAYNYDTAPRECEPK 141
QY 172 CSPMCKSGRSCWSESSEDQSLRTRTYCAGGCA--RCKGPLPTDCCHEQCAGCTGPKHSDC 229
Db 142 CHESCTHG-CWGECPKNCQKFSKLTCSPOCAGRCVGPKECCHLFCAGCGCTGPTQKDC 200
QY 230 LACLHFNHSGICELHCPALVTNTDTFFESMPNPEGRYTFGASCVTACPNYILSTDVGSCT 289
Db 201 IACKNFFDEAVGKECECPPMRKYNPTTYVLETPNPEKAYGATCVKECP-GHLLRDNAGCV 259
QY 290 LVCPLHNOBVTADGDTQRCCKSKPCARVCYGLGMEHLREVRVTSANTQEFAGCKKIFG 349
Db 260 RSCPQDKMDKGE-----CVPNGCPKTCPGVTVLH-----AGNIDSFNCTVIDG 306
QY 350 SLAFLPESFDG--DPASNTA-----PLOPEQLQVFPETLEEITGYLYISAWPDSLPDLVS 401
Db 307 NIRILDQTFSGFDVYVNTGMPRYTLPDPERREVSTVKEITGYLNIETHGTHQPFRLNSV 366
QY 402 FQNLQVIRGRIHNGAY-SLTQGLGIGWLGRLSRLRELGLALHNNHNLHCVHTVTPWD 460
Db 367 FRNLETHGRQLMESMFALAIKVSLSYLEMRNLKQISSGVSIVQHNRDLQCYVSNIRWP 426
QY 461 QLFRNPQOALLHTANRPEDEC----- 481
Db 427 AIQKPEQKVVNENLRADLCQKFLTILISVOHNIIMHIFATCREKNHLLSGVQGRLL 486
QY 482 ----- 481
Db 487 GSWHGSVPYQLQELQFQWHLRRLWLYIQVINSITQKDSNEHQLTDACYSPSVPTSLTIER 546
QY 482 -----VGEGLA-- 487
Db 547 ARYAIQSAGLAMELEQITARSASMRHSKTLPAEGRQVPRWFLGVCASARAGIAEPLAGR 606
QY 488 -----CHOLCARGHCWGPPTQCVNCSQFLRGQECVCECRVLQGLPREYV--NARHCLP 539
Db 607 AVCRCCHPLCELCNHYGYHEQVCKTHYRREQETEC-----PADHYTDEEQECFQ 660
QY 540 CHPECPQNGSVTCFGEADQCVACAHYK-----DPPF-----CVARCPSGVK-PDL 585
Db 661 RHPEC--NG--CTGPGADDCKSCRNPGLFDANETGYPVNGSTMFNCTSKCPLMEHVN 714
QY 586 SYMPIWKFDEEGACOPCPINCHSCVDLDDKCPAEQASPLTSIVSAVVGILLVVLG 645
Db 715 QYTAIGPY-----CAASPPRSKITALND-----VNMIFITGAVLVPTIC 755
QY 646 VVFGI-LIKRROKIRKYT--MRRLLQETELVEPLTPSGAMPNQAOQMRILKETELAKVKV 702
Db 756 ILCVTVYICRQKQKAKKEIVKMTALSGREDEPLRPSNIGANLCKLRIVKDAELRGGV 815
QY 703 LGSAGFTYVYGIWIPDGENVKIPVAIKVLRNTPSPKANKEILDEAYVMAGVSPVYSRL 762
Db 816 LGWAFGRVYGVVWPEGENVKIPVAIKELLKSTGAESSEEFLEAYIMASBEHVNLLKL 875
QY 763 LGICLTSTVQLVTLQMPYGCGLLDHVRNCRGLSQDILLNWCMQIAKMSYLEDVRLVHRD 822
Db 876 LAVCMSSQMWLTQLMPLGLLDYVNNRDKTQSGKALLANWSTQIAKMSYLEDVRLVHRD 935
QY 823 LAARNVLVK---SPNHVKITDFGLARLLDIDETEHADGGKVPKIKWMALESILRRRFTHQ 879

Db 936 LAARNVLRLLAGEDH---DFGLAKLLSSDSNEYKAAAGGKMPKWLALCEIRNRVFTSK 991
QY 880 SDVMSGVTVVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITDVVMVWKWMD 939
Db 992 SDVAFGVTVWELTTFQORHENIPAKIDPLEVGLKLEQPICSLDIYCTLSWHLDD 1051
QY 940 SECRPRFRELVSFBSRMARDPQRFVVIQNEBGL--PASPLDSTFYRSLLEDD---DMGDL 994
Db 1052 AAMRPTFKQLTVFAEPARDPGRYLAIGDKFRLPA-----YTSQDEKOLIRKLAPT 1104
QY 995 VDAREVLPQOGFFCPDPAPGAGGVHRRSSSTRSGGDLTLGLPESEBAP----- 1048
Db 1105 TDGSEAIAPKDDYLOPKAALGPS-----HRTDCT-----DMPKLNRYC 1143
QY 1049 RSLAPSEAGSDVFDG---DLGMAAGKGLQSLPHTDPSPLQRYSEDDPTVPLPSETDGVV 1105
Db 1144 KDFSNKNSGDDERSSAREVGNNLR-----LDLPVSDDDYL 1182
QY 1106 APLTCSPPQPEYVNPQDVRPQPPREGPLPAARPAAGATLERAKTLSPGKNGVVKDVFAFG 1165
Db 1183 MP-TCPQPGNNNNMN-----NPNQNNMAAGVAAGYM-----DLIGVP 1220
QY 1166 GAVENPEYL---TPQGAAPQPH-----PPAFSP-AFONLYYWD 1201
Db 1221 VSDNPEYLLNAOTLGVGESPIPTQITIGIPVMGPGTMEVKVPMGPGSEPTSSDHEYYND 1279

RESULT 14

S35745
C:Species: avian erythroblastosis virus
C:Date: 03-Mar-1994 #sequence_revision 26-May-1995 #text_change 09-Jul-2004
C:Accession: S35745
R:Venustrom, B.; Venustrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.
Submitted to the EMBL Data Library, March 1993
A:Reference number: S35743
A:Accession: S35745
A:Molecule type: DNA
A:Residues: 1-544 <VEN>
A:Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X12707
C:Genetics:
A:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific p
F:135-400/Domain: protein kinase homology <KIN>
F:143-151/Region: protein kinase ATP-binding motif
F:170/Active site: Lys #status predicted

Query Match 24.6%; Score 1647; DB 2; Length 544;
Best Local Similarity 54.9%; Pred. No. 1.2e-61;
Matches 345; Conservative 70; Mismatches 121; Indels 92; Gaps 15;

QY 555 GPEADOCVACAHYKDPFCVARGCPGVKPDLSYMPWKFPDEGACQPCPINCTHSCVDL 614
Db 1 GP--DHCMKAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCOLCHPNCTRCKGP 57
QY 615 DKGCPAEQASPLTSIVSAVV-GILLVVVLGVVFGILIKRQOKIRKYTMRLLOQTEL 673
Db 58 GLEGCP---NGSKTPSIAGVGGGLCLVVGIGIGLYLRR-HIVKRTLRLLQEREL 113
QY 674 VEPLTSGAMPNOAQRILKETELRKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLR 733
Db 114 VEPLTSGEAPNOAHLILKETEFKKVKVGLGFAFGVYKGIWIPGEKVTIPVAIKELR 173
QY 734 ENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTLQMPYGCCLLDHVRENRR 793
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLITQMPYGCCLLDVIREHKN 233
QY 794 LGSQDILLNCWQIAKGNYSYLEDVRLVHRDLAARNVLKSPNHVKITDFFGLARLLDDETE 853
Db 234 IGSQYLLNWCQIAKGNVLEERHVMHRDLAARNVLKTPQHKVITDFFGLAKQLGADEKE 293
QY 853 YHADGGKVPKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLE 913
Db 294 YHAEGGKVPKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPKPYDGIIPASEISSVLE 353

QY 854 YHADGGKVPKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLE 913
Db 294 YHAEGGKVPKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPKPYDGIIPASEISSVLE 353
QY 914 KGERLPQPPICITDVVMVWKWMDSECRPRFRELVSFBSRMARDPQRFVVIQ-NEDIG 972
Db 354 KGERLPQPPICITDVVMVWKWMSDASRPKRELIARFESKWARDPPRYLVITQGERMH 413
QY 973 PASPLDSTFYRSLLEDDMGDLVDAREVLPQOGFFCPDPAPGAGGVHRRSSSTRSG 1032
Db 414 LPSPTDSKRYTLMESEDMEDIVDAEYLVPHQGF-----NSPST--- 454
QY 1033 GGDLTGLPESEBAPRSP-----APSEAGSDVFDGDLGMAAGKGLQSLPHTDPSPLQ 1087
Db 455 -----SRTPLLSLSATSNNSATNCIDRNGG-----H----- 481
QY 1088 RYSEDPVTLPSDETGYVAPLTCSPQPEYVNPQDVRPQPPREGPLPAARPAAGAT-LER 1146
Db 482 -----PVREDGFL-----PAPEYVQ--LMPKKPSTAMVQNIYVYISLTAISK 523
QY 1147 AKTLSPGKNGVVKDVFAFGAVENPEYL 1174
Db 524 LPIDSRYQN-----SHSTAVDNPEYL 544

RESULT 15

S00727
C:Species: avian erythroblastosis virus
C:Date: 01-Dec-1989 #sequence_revision 01-Dec-1989 #text_change 09-Jul-2004
C:Accession: S00727
R:Scotting, P.; Venustrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.
Oncogene Res. 1, 265-278, 1987
A:Title: Common site of mutation in the erbB gene of avian erythroblastosis virus mutat
A:Reference number: S00727; MUID:88217326; PMID:2897102
A:Accession: S00727
A:Molecule type: DNA
A:Residues: 1-545 <SCO>
A:Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X06943
C:Genetics:
A:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP; phosphotransferase
F:135-400/Domain: protein kinase homology <KIN>
F:143-151/Region: protein kinase ATP-binding motif

Query Match 24.5%; Score 1640; DB 2; Length 545;
Best Local Similarity 54.9%; Pred. No. 2.3e-61;
Matches 345; Conservative 69; Mismatches 122; Indels 92; Gaps 15;

QY 555 GPEADOCVACAHYKDPFCVARGCPGVKPDLSYMPWKFPDEGACQPCPINCTHSCVDL 614
Db 1 GP--DHCMKAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCOLCHPNCTRCKGP 57
QY 615 DKGCPAEQASPLTSIVSAVV-GILLVVVLGVVFGILIKRQOKIRKYTMRLLOQTEL 673
Db 58 GLEGCP---NGSKTPSIAGVGGGLCLVVGIGIGLYLRR-HIVKRTLRLLQEREL 113
QY 674 VEPLTSGAMPNOAQRILKETELRKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLR 733
Db 114 VEPLTSGEAPNOAHLILKETEFKKVKVGLGFAFGVYKGIWIPGEKVTIPVAIKELR 173
QY 734 ENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTLQMPYGCCLLDHVRENRR 793
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLITQMPYGCCLLDVIREHKN 233
QY 794 LGSQDILLNCWQIAKGNYSYLEDVRLVHRDLAARNVLKSPNHVKITDFFGLARLLDDETE 853
Db 234 IGSQYLLNWCQIAKGNVLEERHVMHRDLAARNVLKTPQHKVITDFFGLAKQLGADEKE 293
QY 854 YHADGGKVPKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLE 913
Db 294 YHAEGGKVPKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPKPYDGIIPASEISSVLE 353

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QY 914 KGERLPQPPICTIDVTWIMVKWMSIDSECRPRELIVSEFSRWARDPQRVVIQ-NEDLG 972
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
354 KGERLPQPPICTIDVTWIMVKWMSDADSRPKFRELIABFSKWARDPPRYLVIQDERMH 413
QY 973 PASPLDSTFYRSLLEDDMGDLVDAEYLVPOQGFCDPAPGAGGMVHHRHRSSTRSG 1032
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
414 LPSPTDSKFVRTLMEEDMEDIVDAEYLVPHQGF-----NSPST--- 454
QY 1033 GGDLTGLPSEEEAPRSL-----APSEGAGSDVFDGLGMGAAGLQSLPTHDPSPLO 1087
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
455 -----SRTPLLSLSATSNSATNCIDRNG-----H----- 481
QY 1088 RYSEDPTVPLPSETDGVVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPAGAT-LER 1146
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
482 -----PVREDGFL-----PAPEYVNO--LMPKKPSTAMVQNIYVISTATISK 523
QY 1147 AKTLPFGKNGVKDVPFAGGAVENPEYL 1174
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
524 LPMDSRYQN-----SHSTAVDNPEYL 544
```

Search completed: January 25, 2005, 21:30:21
Job time : 45.1624 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:14:59 ; Search time 167.437 Seconds
(without alignments)
4233.600 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255

Perfect score: 6694

Sequence: 1 QVCTGTDMLRLPASPETHL.....TFKGTPTABNPEYGLGVDPV 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt 02:*

1: uniprot_sprot:*

2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6688	99.9	1255	1 ERB2 HUMAN	P04626 homo sapien
2	6195	92.5	1259	2 O18735	O18735 canis famil
3	5899.5	88.1	1259	2 O8K3P9	O8K3P9 rattus norv
4	5895.5	88.1	1259	2 O6P732	O6P732 rattus norv
5	5895.5	88.1	1259	2 AAH61863	AAH61863 rattus no
6	5895	88.1	1257	1 ERB2 RAT	P06494 rattus norv
7	5894.5	88.1	1254	1 ERB2 MESAU	Q60553 mesocricetu
8	5877.5	87.8	1305	2 O6ZPE0	Q6ZPE0 mus musculu
9	5877.5	87.8	1305	2 BAC98297	BAC98297 mus muscu
10	4207	62.8	881	2 O8C0E7	O8C0E7 m mus muscu
11	3160.5	47.2	1209	2 Q9QX70	Q9QX70 rattus norv
12	3159.5	47.2	711	2 O80V89	O80V89 mus musculu
13	3155	47.1	1210	1 EGFR HUMAN	P00533 homo sapien
14	3155	47.1	1210	2 AAS83109	AAS83109 homo sapien
15	3143.5	47.0	1209	2 O8MII8	O8MII8 sus scrofa
16	3135	46.8	1210	1 EGFR MOUSE	Q01279 mus musculu
17	3132	46.8	1210	2 Q9EP98	Q9EP98 mus musculu
18	2999.5	44.8	1308	1 ERB4 HUMAN	Q15303 homo sapien
19	2982.5	44.6	1292	2 Q6UA28	Q6UA28 rattus norv
20	2982.5	44.6	1292	2 Q7SZF7	Q7SZF7 rattus norv
21	2981.5	44.5	1191	2 O7S2F7	O7S2F7 brachydanio
22	2980.5	44.5	1308	2 Q6UA29	Q6UA29 rattus norv
23	2980.5	44.5	1308	2 AAQ77348	AAQ77348 rattus no
24	2972.5	44.4	1191	2 Q6VQA3	Q6VQA3 brachydanio
25	2972.5	44.4	1191	2 AAQ91602	AAQ91602 brachydan
26	2965.5	44.3	1308	1 ERB4 RAT	Q62956 rattus norv
27	2864	42.8	1209	2 O6XJ78	O6XJ78 xiphophorus
28	2864	42.8	1209	2 AAP55673	AAP55673 xiphophor
29	2742.5	41.0	1165	2 O9YH40	O9YH40 xiphophorus
30	2729.5	40.8	1137	2 Q9W6P6	Q9W6P6 gallus gall
31	2711.5	40.5	1167	1 XMRK_XIPWA	P13388 xiphophorus

32 2436.5 36.4 1342 1 ERB3 HUMAN
33 2367 35.4 1339 1 ERB3 RAT
34 2317 34.6 1328 2 P79754
35 2212.5 33.1 1305 2 O8AW81
36 2063 30.8 1429 2 Q7PPN5
37 2049.5 30.6 1340 2 Q7PHU6
38 2044.5 30.5 1433 2 Q9B1H9
39 2025.5 30.3 435 2 Q6ZNM4
40 2025.5 30.3 435 2 BAD18701
41 2009 30.0 1325 2 Q6SAI6
42 2009 30.0 1325 2 AAR85155
43 2009 30.0 1325 2 AAR85225
44 2009 30.0 1325 2 AAR85252
45 2009 30.0 1325 2 AAR85294

ALIGNMENTS

RESULT 1
ERB2 HUMAN
ID ERB2 HUMAN STANDARD; PRT; 1255 AA.
AC P04626;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Tyrosine kinase-type cell surface receptor HER2) (MLN 19).
DE Name=ERBB2; Synonyms=HER2, NGL, NEU;
GN Homo sapiens (Human).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=86118663; PubMed=3003577;
RA Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N., Saito T., Toyoshima K.;
RT "Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth factor receptor.";
RL Nature 319:230-234 (1986).
RN [2]
RP SEQUENCE FROM N.A., AND VARIANT ALA-1170.
RX MEDLINE=86070181; PubMed=2999974;
RA Cousens L., Yang-Peng T.L., Liao Y.C., Chen E., Gray A., McGrath J., Seeburg P.H., Giermann T.A., Schleisinger J., Francke U., Levinson A., Ullrich A.;
RT "Tyrosine kinase receptor with extensive homology to EGF receptor shares chromosomal location with neu oncogene.";
RL Science 230:1132-1139 (1985).
RN [3]
RP SEQUENCE FROM N.A., AND VARIANTS CYS-452; VAL-655 AND ALA-1170.
RX Rieder M.J., Livingston R.J., Daniels M.R., Montoya M.A., Chung M.-W., Miyamoto K.E., Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S., Sherwood J.K., Witkar L.A., Nickerson D.A.;
RT "NIH-SNPs, environmental genome project. NIHES ES15478, Department of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
RL Submitted (DEC-2002) to the EMBL/GenBank/DBJ databases.
RN [4]
RP SEQUENCE OF 737-1031 FROM N.A.
RX MEDLINE=86016729; PubMed=2995967;
RA Semba K., Kamata N., Toyoshima K., Yamamoto T.;
RT "A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epidermal growth factor-receptor gene and is amplified in a human salivary gland adenocarcinoma.";
RL Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501 (1985).
RN [5]
RP VARIANTS VAL-654 AND VAL-655.
RX MEDLINE=93194196; PubMed=8095488;
RA Ehsani A., Low J., Wallace R.B., Wu A.M.;
RT "Characterization of a new allele of the human ERBB2 gene by allele-specific competition hybridization.";

Db 24 QVCTGDMKRLRSPASETHLDMRLHLYQGCVQGNLELYTLPANASLSFLQDIQEVQY 83
QY 61 VLIAHNQVQPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 VLIHNSQVQPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
QY 121 SLTEILKGGVLIQRLNQLCVQDILMKDIFKKNQALALTLIDNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQRLNQLCVQDILMKDIFKKNQALALTLIDNRSRACHPCSPCKGSR 203
QY 181 CWGESSEDQSLTRTVCAGCARCKGPLEPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGASSGDQSLTRTVCAGCARCKGPLEPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
QY 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTLVCPLNQEVY 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTLVCPLNQEVY 323
QY 301 AEDGTORCKSKPCARVCYGLGMEHLREVRAVTSANIOEFAGCKIFGSLAPLPSFPG 360
Db 324 AEDGTORCKSKPCARVCYGLGMEHLREVRAVTSANIOEFAGCKIFGSLAPLPSFPG 383
QY 361 DPASNTAPLQPEQLQVFLEETITGYLYISAMPDLSPLSVFONQVIRGRILHNGAYS 420
Db 384 DPASNTAPLQPEQLQVFLEETITGYLYISAMPDLSPLSVFONQVIRGRILHNGAYS 443
QY 421 TLOGLSIGLRLSRELGLALIHNNHLCFVHTVPWDQLFRPNHQALLTANRPEDE 480
Db 444 TLOGLSIGLRLSRELGLALIHNNHLCFVHTVPWDQLFRPNHQALLTANRPEDE 503
QY 481 CVGEGIALCHOLCARGHCWGPPTQCVNCSQFIRGQECVECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGIALCHOLCARGHCWGPPTQCVNCSQFIRGQECVECRVLQGLPREYVNAHCLPC 562
QY 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVRCPSGKPDLSYMPIMKFPDDEGAC 600
Db 563 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVRCPSGKPDLSYMPIMKFPDDEGAC 622
QY 601 QPCPNCTHSCVDLDKGPAPORASPLTSIVSAGVILLVVLGVVGLILKROQKTR 660
Db 623 QPCPNCTHSCVDLDKGPAPORASPLTSIVSAGVILLVVLGVVGLILKROQKTR 682
QY 661 KYTMRLLQETLVEPLTPSGAMPNOAQRILKTELKVKVLGSGAFGVYKGIWIPDG 720
Db 683 KYTMRLLQETLVEPLTPSGAMPNOAQRILKTELKVKVLGSGAFGVYKGIWIPDG 742
QY 721 ENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVGSFYVSRLLGICLTSTVQLVTQMPY 780
Db 743 ENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVGSFYVSRLLGICLTSTVQLVTQMPY 802
QY 781 GCLLDHVRNREGLSGQDILLNMCQIAGKMSVLEVDVLRHDLAARNVLKSPNHVKITD 840
Db 803 GCLLDHVRNREGLSGQDILLNMCQIAGKMSVLEVDVLRHDLAARNVLKSPNHVKITD 862
QY 841 FGLARLLDIDEYHADGGKVPKKNWALSILRRRTHQSDVMSYGVTVWELMTFCAPY 900
Db 863 FGLARLLDIDEYHADGGKVPKKNWALSILRRRTHQSDVMSYGVTVWELMTFCAPY 922
QY 901 DGIPAREIPDLLEKGRLLPQPPCTIDVTVMYKWMIDSECRPRFELVSEFMRARDP 960
Db 923 DGIPAREIPDLLEKGRLLPQPPCTIDVTVMYKWMIDSECRPRFELVSEFMRARDP 982
QY 961 QBFVVTQNEIDLPASPLDSTFYRSLLDDDDMGDLVDAEYLVPOQGFCDPAPGAGMV 1020
Db 983 QBFVVTQNEIDLPASPLDSTFYRSLLDDDDMGDLVDAEYLVPOQGFCDPAPGAGMV 1042
QY 1021 HRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEAGSDVDFDGLGMAAKGLQSLPT 1080
Db 1043 HRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEAGSDVDFDGLGMAAKGLQSLPT 1102
QY 1081 HPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOQDVRPQPPSPREGPLPAARPA 1140

Db 1103 QDPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOQDVRPQPPSPREGPLPAARPA 1162
QY 1141 GATLER-----AKTISPGKGNVVKVDFARFGAVENPEYLTPOGGAAPQPHPPAFSPAFD 1195
Db 1163 GATLERPKTSLPKTISPGKGNVVKVDFARFGAVENPEYLTPOGGAAPQPHPPAFSPAFD 1222
QY 1196 NLYYWDQDPERGAPSPSTFKTPTAENPEYLGLDVPE 1232
Db 1223 NLYYWDQDPERGAPSPSTFKTPTAENPEYLGLDVPE 1259
RESULT 3
Q8K3F9 PRELIMINARY; PRT; 1259 AA.
ID Q8K3F9
AC Q8K3F9; (TREMELrel. 22, Created)
DT 01-OCT-2002 (TREMELrel. 22, Last sequence update)
DT 01-OCT-2002 (TREMELrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMELrel. 26, Last annotation update)
DE Neu protoconcoprotein.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Watson P.A., Kim K., Chen K.-S., Gould M.N.;
RL Submitted (MAY-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY116182; RAN50093.1; -
DR HSP; P06494; 1N8Y.
DR GO; GO:0016020; C.membrane; IEA.
DR GO; GO:0005524; F.ATP binding; IEA.
DR GO; GO:0005006; F.epidermal growth factor receptor activity; IEA.
DR GO; GO:0016740; F.transferrase activity; IEA.
DR GO; GO:0006468; P.protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P.transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00219; TyrK; 1.
DR PROSITE; PS00018; EF_HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00111; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
SQ SEQUENCE 1259 AA; B724BD5CC33AE953 CRC64;

Query Match 88.1%; Score 5899.5; DB 2; Length 1259;
Best Local Similarity 88.0%; Pred. No. 7,8e-299;
Matches 1085; Conservative 50; Mismatches 97; Indels 1; Gaps 1;

QY 1 QVCTGDMKRLRSPASETHLDMRLHLYQGCVQGNLELYTLPANASLSFLQDIQEVQY 60
Db 27 QVCTGDMKRLRSPASETHLDMRLHLYQGCVQGNLELYTLPANASLSFLQDIQEVQY 86
QY 61 VLIAHNQVQPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 119
Db 87 VLIAHNQVQPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 146

QY 120 RSITEILKGGVLIQRNPOLCYQDTILWKDIFHKNNQALALTLIDNRSRACHPCSPMKGKS 179
 Db 147 RSITEILKGGVLIQRNPOLCYQDWLVKQVFRKNNQLAPVDIDNRSRACPPCAPACKDN 206
 QY 180 RCGESSEDCQSILTRTVACGACRCKGPIPTDCCHQCAAGCTGPKHSDCLACLFHNHSG 239
 Db 207 HCWGESPEDCQILITICTSGCACRCKGRPLTDCCHQCAAGCTGPKHSDCLACLFHNHSG 266
 QY 240 ICLHCPALVYNTDFESMNPPEGRVTFGASCVCAPYNYLSTDVGSCTFLVCPLHNOEV 299
 Db 267 ICLHCPALVYNTDFESMNPPEGRVTFGASCVCAPYNYLSTDVGSCTFLVCPLHNOEV 326
 QY 300 TABDGTQRCKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLESPD 359
 Db 327 TABDGTQRCKSKPCARVCYGLGMEHLRGARITSDNVQEFQCKKIFGSLAFLESPD 386
 QY 360 GDPASNTAPLOPQLOVFETLEBITGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYS 419
 Db 387 GDPSSGIAPLRPEQLOVFETLEBITGYLYISAWPDSLPDLVSFQNLRIIRGRILHNGAYS 446
 QY 420 LTIQGLGISWGLRSRLGSLGIALIHNTHLCFVHTVPMDQLFRNPHQALLHTANRPED 479
 Db 447 LTIQGLGISWGLRSRLGSLGIALIHRNAHLFCFVHTVPMDQLFRNPHQALLHSGNRPPE 506
 QY 480 ECVGEGILACHQLCARGHCWGPPTQCVNCSQFLRGQECVECRVLQGLPREYVNAHCLP 539
 Db 507 DCGLEGLVCSLCAHGHCWGPPTQCVNCSHFLRGQECVECRVWKLPREYVSDKRLP 566
 QY 540 CHPECPQNSVTCFGEADQCVACAHYKDPFPCVACRCPGKVPKPSYMIWKPDEBGA 599
 Db 567 CHPECPQNSSETCFGEADQCAACAHYKDSVSCVACRCPGKVPKPSYMIWKPDEBEG 626
 QY 600 CQPCPNCNTHSCVDLDDKGPAPORASPLTSIVSAGVILLVVLVGVFGLIKRQOKI 659
 Db 627 CQPCPNCNTHSCVDLDDKGPAPORASPVFIATVVGVLFLVILVVGVLIKRQOKI 686
 QY 660 RYKTMRLQETELVEPLTSGAMPNQAOQRILKTELKRVKVLGSAFVYKGIWIPD 719
 Db 687 RYKTMRLQETELVEPLTSGAMPNQAOQRILKTELKRVKVLGSAFVYKGIWIPD 746
 QY 720 GENVKIPVAIKVLRNTPSKANKIILDEAVYMGVSPYVRLIGLICLTSTVOLVQLMPP 779
 Db 747 GENVKIPVAIKVLRNTPSKANKIILDEAVYMGVSPYVRLIGLICLTSTVOLVQLMPP 806
 QY 780 YGCLLDHVRNRLGSLQDLNLCMOIAKMSVLEVLVRLDIAARNVLVKSFNHVKIT 839
 Db 807 YGCLLDHVRNRLGSLQDLNLCMOIAKMSVLEVLVRLDIAARNVLVKSFNHVKIT 866
 QY 840 DFLARLLDIDETEHADGKVPKIKWMALESILRRRTHQSDVMSYGVTVWELMTFGAKP 899
 Db 867 DFLARLLDIDETEHADGKVPKIKWMALESILRRRTHQSDVMSYGVTVWELMTFGAKP 926
 QY 900 YDGIPIAREIPDLLEKGRLLPOPPCTIDVTVMYKMWIDSECRPRELVSFERNARD 959
 Db 927 YDGIPIAREIPDLLEKGRLLPOPPCTIDVTVMYKMWIDSECRPRELVSFERNARD 986
 QY 960 PQRFVWQNEDELGPASPLDSTFYRSLLDDMDGLVDAEYLYPQOQFFCPDPAPGAGCM 1019
 Db 987 PQRFVWQNEDELGPSSPMDSTFYRSLLDDMDGLVDAEYLYPQOQFFCPDPPTPGTGST 1046
 QY 1020 VHRHRSSTRTSGGGDLTLGLEPSEBAPRSLAPSEAGSDVFDGLMGAAKGLQSLP 1079
 Db 1047 AHRHRSSTRTSGGGDLTLGLEPSEBAPRSLAPSEAGSDVFDGLMGAAKGLQSLP 1106
 QY 1080 THDPSPLQRYSEDPVLPSETDGYVAPLTCSPOPEYVNPQVDRPQPPSPREGPLPAARP 1139
 Db 1107 PHDLSPLQRYSEDPVLPSETDGYVAPLTCSPOPEYVNPQVDRPQPPSPREGPLPAARP 1166
 QY 1140 AGATLERAKTLPCKNGVWQVAFGGAIVENPEYLTQGGAAPOPHPPAFSPAFDNLVY 1199
 Db 1167 AGATLERAKTLPCKNGVWQVAFGGAIVENPEYLTQGGAAPOPHPPAFSPAFDNLVY 1226
 QY 1200 WDQDPPPERGAPPSTFKTPTTAENPEYLGLDVVPV 1232

Db 1227 WDQNSSEQPPSPFNFGTPTAENPEYLGLDVVPV 1259
 RESULT 4
 Q6P732
 ID Q6P732 PRELIMINARY; PRT; 1259 AA.
 AC Q6P732;
 DT 05-JUL-2004 (T-EMBLrel. 27, Created)
 DT 05-JUL-2004 (T-EMBLrel. 27, Last sequence update)
 DT 05-JUL-2004 (T-EMBLrel. 27, Last annotation update)
 DE V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.
 GN Name=Erbb2;
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_Taxid=101116;
 RN [1]
 RC SEQUENCE FROM N.A.
 RC TISSUE=Prostate;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zedberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Rapletchenko M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Uedin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Pahey J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,
 RA Whitting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
 RA Krzywinski M.I., Skalak U., Smillius D.E., Schnerch A., Schein J.E.,
 RA Jones S.J., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length human
 and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
 [2]
 RC SEQUENCE FROM N.A.
 RC TISSUE=Prostate;
 RA Strausberg R.;
 RL Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.
 DR ENBL; BC061863; AAH61863.1; -;
 DR InterPro; IPR002048; EF-hand.
 DR InterPro; IPR000494; EGFR L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin repeat.
 DR InterPro; IPR009030; Growth factor.
 DR InterPro; IPR011009; Kinase-like.
 DR InterPro; IPR007719; Prot kinase.
 DR InterPro; IPR002290; Ser Thr kinase.
 DR InterPro; IPR001245; Tyr kinase.
 DR InterPro; IPR008266; Tyr kinase_AS.
 DR InterPro; IPR004019; YFP motif.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF00669; Kinase; 1.
 DR Pfam; PF01030; Recep_L domain; 2.
 DR Pfam; PF02757; YLP_2.
 DR PRINTS; PR00109; TYRKINASE.
 DR PRODOM; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 4.
 DR SMART; SM00220; S_TK; 1.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00018; EF HAND; UNKNOWN 1.
 DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
 DR PROSITE; PSS0011; PROTEIN_KINASE_DOM; 1.
 DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
 KW ATP-binding; Kinase; Transferase.
 SQ SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;

Qy	1020	VHHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEAGSDVFDGDLGNAGKGLQSLP	1079		
Db	1047	AHRRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEAGSDVFDGDLGNAGKGLQSLP	1106		
Qy	1080	THDPSPLOQRYSDPTVPLPSETDGYVAPLTCSPQPEYVNVQPDVVRPQPPSPREGPLPAARP	1139		
Db	1107	PHDLSPLQRYSDPTVPLPSETDGYVAPLTCSPQPEYVNVQPDVVRPQPPSPREGPLPAARP	1166		
Qy	1140	AGATLERAKTLSPGKNGVVKDVFAPGAVENPEYLTPOGAAAPQPHPPPAFSPAFNLVY	1199		
Db	1167	AGATLERAKTLSPGKNGVVKDVFAPGAVENPEYLTPOGAAAPQPHPPPAFSPAFNLVY	1226		
Qy	1200	WDQPPPERGAPSTFKGTPTAENPEYLGIDVNV	1232		
Db	1227	WDQNSSEQPPSPNFEGTPTAENPEYLGIDVNV	1259		
RESULT 5					
ID	AAH61863	PRELIMINARY;	PRT;	1259	AA.
AC	AAH61863;				
DT	02-MAR-2004	(Tremblrel. 27, Created)			
DT	02-MAR-2004	(Tremblrel. 27, Last sequence update)			
DT	02-MAR-2004	(Tremblrel. 27, Last annotation update)			
DE	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.				
OS	Rattus norvegicus (Rat).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.				
OX	NCBI_TaxID=10116;				
RN	[1]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Prostate;				
RX	MEDLINE=22388257; PubMed=12477932;				
RA	Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,				
RA	Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,				
RA	Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,				
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,				
RA	Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,				
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,				
RA	Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,				
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,				
RA	Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,				
RA	Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,				
RA	Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,				
RA	Fahey J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,				
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,				
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,				
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,				
RA	Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,				
RA	Jones S.J., Marra M.A.;				
RT	"Generation and initial analysis of more than 15,000 full-length human				
RT	and mouse cDNA sequences.";				
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).				
RN	[2]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Prostate;				
RA	Strausberg R.;				
RL	Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.				
DR	EMBL; BC061863; AAH61863.1;				
SQ	SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;				
Query Match 88.1%; Score 5895.5; DB 2; Length 1259;					
Best Local Similarity 87.9%; Pred. No. 1.3e-298;					
Matches 1084; Conservative 50; Mismatches 98; Indels 1; Gaps 1;					
Qy	1	QVCTGTDMLKRLPASPEHLDMLRHLYQGCQVQGNLELTYPNANSLFLODIOBVOGY	60		
Db	27	QVCTGTDMLKRLPASPEHLDMLRHLYQGCQVQGNLELTYPNANSLFLODIOBVOGY	86		
Qy	61	VLIHNVQVQLRIVRGTLQFEDNYALVLDNGDPLNNTTPTV-GASPGGLRELQ	119		
Db	87	MLIAHNVQVQLRIVRGTLQFEDNYALVLDNGDPLNNTTPTV-GASPGGLRELQ	146		
Qy	120	RSLEILKGGVLIQRPOLCYQDITLWKQIFHKNQALATLIDTNSRACHPCSPNCKGS	179		
Db	147	RGLEILKGGVLIQRPOLCYQDITLWKQIFHKNQALATLIDTNSRACHPCSPNCKGS	206		
Qy	180	RCWGESSEDCQSLTRVTCAGGACRCKGPLPTDCHEQCAAGCTGPKHSDCLACHFNHSG	239		
Db	207	HCWGESPEDCQILTGICTSGCARCKGRUPTDCHEQCAAGCTGPKHSDCLACHFNHSG	266		
Qy	240	ICELHCPALVTYNTDTFESMNPBEGRYTFGASCVTATCPYNYLSTDVSGCTLCPLHNQEV	299		
Db	267	ICELHCPALVTYNTDTFESMNPBEGRYTFGASCVTATCPYNYLSTDVSGCTLCPLHNQEV	326		
Qy	300	TAEADGTORCEKSKPCARVCYGLGMEHLREVRVAVTSANTIOEFAGCKKIFGSLAFIPESFD	359		
Db	327	TAEADGTORCEKSKPCARVCYGLGMEHLREVRVAVTSANTIOEFAGCKKIFGSLAFIPESFD	386		
Qy	360	GPASNTAPLQPEOLQVFEITGLYVTSAMPDLSLPDLVSFQNLQVIRGLHNGAYS	419		
Db	387	GPSSGIAPLRPEOLQVFEITGLYVTSAMPDLSLPDLVSFQNLQVIRGLHNGAYS	446		
Qy	420	LTLQGLIGLWGLRLSRLGSLALIHNTLHCFVHTVPWDQLFRNPHQALLHTANRPED	479		
Db	447	LTLQGLIGLWGLRLSRLGSLALIHNTLHCFVHTVPWDQLFRNPHQALLHTANRPED	506		
Qy	480	ECVGEGLACHQICARGHGWPGTQCNCVCSQFLGQECVEECRVLOGLPREYNARHCLP	539		
Db	507	DCGLEGLVNCALHGHGWPGTQCNCVCSQFLGQECVEECRVLOGLPREYNARHCLP	566		
Qy	540	CHPECQFQNGSVTCFPEADQCVACAHYKDPDPCVACRCPGKVPDLSPYMPIKWPDEBGA	599		
Db	567	CHPECQFQNGSVTCFPEADQCVACAHYKDPDPCVACRCPGKVPDLSPYMPIKWPDEBGA	626		
Qy	600	QCPCPINCHSCVDLDDKCPABQASPTISVAVGILLVVLGVVGFGLIKRRQKI	659		
Db	627	QCPCPINCHSCVDLDDKCPABQASPTISVAVGILLVVLGVVGFGLIKRRQKI	686		
Qy	660	RKYTWRLLOETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAGFTVYKGIWIPD	719		
Db	687	RKYTWRLLOETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAGFTVYKGIWIPD	746		
Qy	720	GENVKIPVAIKVIRENTSPKANKEILDEAYVWAGVSPYVSRLLGLICLSTVQLVTQMLP	779		
Db	747	GENVKIPVAIKVIRENTSPKANKEILDEAYVWAGVSPYVSRLLGLICLSTVQLVTQMLP	806		
Qy	780	YGCILLDVRNRRGRIGSQDLNWCQIAKMSYLEDLVRLVHRDLAARNLVKSPNHVKIT	839		
Db	807	YGCILLDVRNRRGRIGSQDLNWCQIAKMSYLEDLVRLVHRDLAARNLVKSPNHVKIT	866		
Qy	840	DFGLARLLDIDETEVHADGKVPKIKWMALESILRRFTHOSDVMSYGVTVWELMTFGAKP	899		
Db	867	DFGLARLLDIDETEVHADGKVPKIKWMALESILRRFTHOSDVMSYGVTVWELMTFGAKP	926		
Qy	900	YDGIPAREIPDLLEKGERLPQPPICITIDVYIMVWKCMIDSECRPFRELVSFSEMRAD	959		
Db	927	YDGIPAREIPDLLEKGERLPQPPICITIDVYIMVWKCMIDSECRPFRELVSFSEMRAD	986		
Qy	960	PQRFVVIQNEIDGLPASPLSTFYSRLLEDMDGLVDABEYLVPQGGFFCPDPAAGQM	1019		
Db	987	PQRFVVIQNEIDGLPASPLSTFYSRLLEDMDGLVDABEYLVPQGGFFCPDPAAGQM	1046		

DR	InterPro: IPR009030; Grow fac recept.	QY	61	VLIHNOVRVPLQRIIRIVRGTOIFEDNYALAVLDNGDPLNNTTPTT-GASPGGLRELQL	119
DR	InterPro: IPR011009; Kinase like.	Db	84	MLIAHNOVRVPLQRIIRIVRGTOIFEDNYALAVLDNRDPQDNVAASPTGRTPEGLRELQL	143
DR	InterPro: IPR000719; Prot kinase.	QY	120	RSLEILKGGVLIQIRNPOLCYQDTILWKDIFHKKNQALALTLIDNRSRACHPCSPMCKGS	179
DR	InterPro: IPR001245; Tyr_kinase.	Db	144	RSLEILKGGVLIQIRNPOLCYQDVLWKDIFRKNQALAPVDIDNRSRACHPCAPACKDN	203
DR	InterPro: IPR008266; Tyr_kinase_AS.	QY	180	RCWGESSEDQSLRTTVCAGCARCKPLPTDCCHCEQCAAGCTGPKHSDCLACLFHNSG	239
DR	InterPro: IPR004019; YLP_motif.	Db	204	HCWGESPEDCQILGTTCISGACRCKRLPTDCCHCEQCAAGCTGPKHSDCLACLFHNSG	263
DR	Pfam: PF00757; Furin-like; 1.	QY	240	ICELHCPALVTYNTDTFESMENPEGRYTFGASCYTCAPYNYLSTDVGSCTLVCPHNOEV	299
DR	Pfam: PF02757; YLP_2_domain; 2.	Db	264	ICELHCPALVTYNTDTFESMENPEGRYTFGASCYTCAPYNYLSTDVGSCTLVCPHNOEV	323
DR	PRINTS; PRO0109; TYRKINASE.	QY	300	TAEQGTORCEKCKSPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFD	359
DR	SMART; SM00261; FU; 4.	Db	324	TAEQGTORCEKCKSPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFD	383
DR	PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.	QY	360	GDPSNTAPLQPEOLQVPFETLEETIGLYISAWPDSLPDLVSFQNLQVIRGRIILHNGYS	419
DR	PROSITE; PS00101; PROTEIN_KINASE_DOM; 1.	Db	384	GDPSNTAPLQPEOLQVPFETLEETIGLYISAWPDSLPDLVSFQNLQVIRGRIILHNGYS	443
DR	PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.	QY	420	LTQGLGISWLGSLRLSRLGSLALIHNTHLCFVHTVPMDLPFRNPHQALLHTANRPED	479
KW	3D-structure; ATP-binding; Disease mutation; Glycoprotein; Multigene family; Phosphorylation; Proto-oncogene; Receptor; Signal; Transferrase; Transmembrane; Tyrosine-protein kinase.	Db	444	LTQGLGISWLGSLRLSRLGSLALIHNTHLCFVHTVPMDLPFRNPHQALLHTANRPED	503
KW	Transferrase; Tyrosine-protein kinase.	QY	480	E-CVGEGLACHQLCARGHCWGPTQCVNCSQFIRGQECVEECRVLQGLPREYNARHCL	538
FT	SIGNAL 1 21	Db	504	DLCVSSGLVCSLCAHGHGWCWGPTQCVNCSQFIRGQECVEECRVLQGLPREYNARHCL	563
FT	CHAIN 22 1257	QY	539	PCHPEQONSGVTCFGEADQCAVCAHYKDPFCVACRCPGSKVPDLISYMPIMKFPDDEG	598
FT	DOMAIN 22 654	Db	564	PCHPEQONSGVTCFGEADQCAVCAHYKDPFCVACRCPGSKVPDLISYMPIMKFPDDEG	623
FT	DOMAIN 655 677	QY	599	ACQPCPINCTHSCVDLDDKGPAPORASPLTSIYSAVVGILLVVLVGVVFGILIKRRQK	658
FT	DOMAIN 678 1257	Db	624	ICQPCPINCTHSCVDLDDKGPAPORASPLTSIYSAVVGILLVVLVGVVFGILIKRRQK	683
FT	DOMAIN 159 369	QY	659	IRKTYMRLLQETELVEPLTPSGAMPNQAOMRILKTELKRVKVLGSGAFVYKGIWIP	718
FT	DOMAIN 473 646	Db	684	IRKTYMRLLQETELVEPLTPSGAMPNQAOMRILKTELKRVKVLGSGAFVYKGIWIP	743
FT	DOMAIN 722 989	QY	719	DGENVKIPIVAIKVLRNTSPKANKELDEAYMAGVSPYVSRLLGI CLTSTVQLVTQLM	778
FT	NP_BIND 728 736	Db	744	DGENVKIPIVAIKVLRNTSPKANKELDEAYMAGVSPYVSRLLGI CLTSTVQLVTQLM	803
FT	BINDING 755 755	QY	779	PYGCLLDHVRENRRGLSGQDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHVKI	838
FT	ACT_SITE 847 847	Db	804	PYGCLLDHVRENRRGLSGQDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHVKI	863
FT	DISULFID 196 205	QY	839	TFGLARLLDIDETEHADGGKVPDKWMALESILRRFTTHOSDVMSYGVYVWELMTFGAK	898
FT	DISULFID 200 213	Db	864	TFGLARLLDIDETEHADGGKVPDKWMALESILRRFTTHOSDVMSYGVYVWELMTFGAK	923
FT	DISULFID 221 228	QY	899	PDYDIPAREIPDLLEKGERLPQPICTIDVYMWKMWIMIDSECRPRFRELVSFSESMAR	958
FT	DISULFID 225 236	Db	924	PDYDIPAREIPDLLEKGERLPQPICTIDVYMWKMWIMIDSECRPRFRELVSFSESMAR	983
FT	DISULFID 237 245	QY	959	DPQRFVVIQNEDLGPASPDLSTFYRSLLEDMDGDLVDAEYLVYVQQGFCDPAPGAGG	1018
FT	DISULFID 241 253	Db	984	DPQRFVVIQNEDLGPASPDLSTFYRSLLEDMDGDLVDAEYLVYVQQGFCDPAPGAGG	1043
FT	DISULFID 256 265	QY	1019	MVHRRSSSTRSGGDLTLGLEPSEEEAPRPLAPSEGAGSDVDFDGLMGAAKGLQSL	1078
FT	DISULFID 269 296	Db	1044	TARRHRSSTRSGGDLTLGLEPSEEEAPRPLAPSEGAGSDVDFDGLMGAAKGLQSL	1103
FT	DISULFID 300 312	QY	1079	PTHDPSPLOKYSDDPTVPLPSETDGYVAPLTCSPQPEYVQNPDPVRPPSPREGPLPAAR	1138
FT	DISULFID 316 332	Db	1104	SPHDLSPLOKYSDDPTVPLPSETDGYVAPLTCSPQPEYVQNPDPVRPPSPREGPLPAAR	1163
FT	DISULFID 335 339	QY	1139	PAGATLERAKTLSPGKNGVVKVVFAPGGAVENPEYLTPOGGAAPQHPHPPAPSPADNLY	1198
FT	DISULFID 513 522	Db			
FT	DISULFID 517 530	QY			
FT	DISULFID 533 542	Db			
FT	DISULFID 546 562	QY			
FT	DISULFID 565 578	Db			
FT	DISULFID 569 586	QY			
FT	DISULFID 589 598	Db			
FT	DISULFID 602 625	QY			
FT	DISULFID 628 636	Db			
FT	DISULFID 632 644	QY			
FT	MOD_RES 1141 1141	Db			
FT	MOD_RES 1250 1250	QY			
FT	CARBOHYD 68 68	Db			
FT	CARBOHYD 188 188	QY			
FT	CARBOHYD 260 260	Db			
FT	CARBOHYD 532 532	QY			
FT	CARBOHYD 573 573	Db			
FT	CARBOHYD 631 631	QY			
FT	CARBOHYD 661 661	Db			
FT	VARIANT 661 661	QY			
FT	SEQUENCE 1257 AA; 138831 MW; 6129264583011402 CRC64;	Db			
QY	Query Match				
Db	Best Local Similarity 87.9%; Pred. No. 1.3e-298;				
	Matches 1085; Conservative 50; Mismatches 97; Indels 2; Gaps 2;				
QY	1 QVCTGDMKRLPASFPETHLDMRLHYQGCQVQGNLETLVLPNVLASFLQDIOEVQGY 60				
Db	24 QVCTGDMKRLPASFPETHLDMRLHYQGCQVQGNLETLVLPNVLASFLQDIOEVQGY 83				

```

Db 1164 PAGATLBRPKTSLSPKQGVKVDVFAFGCAVENPEYLVPRCTASPPHPSPAFNOLY 1223
Qy 1199 YWQDDPERRGAPPTFGTPTAENPEYLGLDV 1232
Db 1224 YWQNSSEGGPPSNFEGTPTAENPEYLGLDV 1257

RESULT 7
ERB2 MESAU
ID_ERB2 MESAU STANDARD; PRT; 1254 AA.
AC Q60553;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2).
GN Name=ERB2; Synonyms=NEU;
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus
NCBI_TaxID=10036;
[1]
RN SEQUENCE FROM N.A.
RP TISSUE=Nerve;
RX MEDLINE=94193007; PubMed=7908275;
RA Nakamura T.; Ushijima T.; Ishizaka Y.; Nagao M.; Arai M.; Yamazaki Y.;
RA Ishikawa T.;
RT "Cloning and activation of the Syrian hamster neu proto-oncogene.";
RL Gene 140:251-255(1994).
CC -!- FUNCTION: Essential component of a neurotrophin receptor complex,
CC although neurotrophins do not interact with it alone. GRB3 is a
CC potential ligand for this receptor. Not activated by EGF, TGF-
CC alpha and amphiregulin (By similarity).
CC -!- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
CC tyrosine phosphate.
CC -!- SUBUNIT: Heterodimer with each of the other ERBB receptors
CC (Potential). Interacts with PRKCA/BP (By similarity).
CC -!- SUBCELLULAR LOCATION: Type I membrane protein.
CC -!- PTM: Ligand-binding increases phosphorylation on tyrosine
CC residues.
CC -!- SIMILARITY: Belongs to the EGF receptor family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC
CC -----
CC EMBL; D16295; BAA03801.1; -.
CC PIR; I48161; I48161.
CC DR HSP; P06494; IN8Y.
CC DR InterPro; IPR000494; EGFR_L.
CC DR InterPro; IPR006211; Furin-like.
CC DR InterPro; IPR008212; Furin repeat.
CC DR InterPro; IPR009030; Grow_fac_recept.
CC DR InterPro; IPR011009; Kinase-like.
CC DR InterPro; IPR000719; Prot_kinase.
CC DR InterPro; IPR001245; Tyr_kinase.
CC DR InterPro; IPR008266; Tyr_kinase_AS.
CC DR Pfam; PF00757; Furin-like; 1.
CC DR Pfam; PF00069; Kinase; 1.
CC DR Pfam; PF01030; Recep_L_domain; 2.
CC DR PRINTS; PR00109; TYRKINASE.
CC DR ProDom; PD000001; Prot_kinase; 1.
CC DR SMART; SM00261; FU; 4.
CC DR SMART; SM00219; TYRK; 1.
CC DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

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DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Disease mutation; Glycoprotein; Multigene family;
KW Phosphorylation; Proto-oncogene; Receptor; Signal; Transferase;
KW Transmembrane; Tyrosine-protein kinase.
KW SIGNAL 1 21 Potential.
FT CHAIN 22 1254 Receptor protein-tyrosine kinase erbB-2.
FT DOMAIN 22 652 Extracellular (Potential).
FT TRANSMEM 653 675 Potential.
FT DOMAIN 676 1254 Cytoplasmic (Potential).
FT DOMAIN 158 368 Cys-rich.
FT DOMAIN 472 644 Cys-rich.
FT DOMAIN 720 987 Protein kinase.
FT NP_BIND 726 734 ATP (By similarity).
FT BINDING 753 753 ATP (By similarity).
FT ACT_SITE 845 845 By similarity.
FT DISULFID 195 204 By similarity.
FT DISULFID 199 212 By similarity.
FT DISULFID 236 244 By similarity.
FT DISULFID 240 252 By similarity.
FT DISULFID 255 264 By similarity.
FT DISULFID 268 295 By similarity.
FT DISULFID 299 311 By similarity.
FT DISULFID 315 331 By similarity.
FT DISULFID 334 338 By similarity.
FT DISULFID 511 520 By similarity.
FT DISULFID 515 528 By similarity.
FT DISULFID 531 540 By similarity.
FT DISULFID 544 560 By similarity.
FT DISULFID 563 576 By similarity.
FT DISULFID 567 584 By similarity.
FT DISULFID 587 596 By similarity.
FT DISULFID 600 623 By similarity.
FT DISULFID 626 634 By similarity.
FT DISULFID 630 642 By similarity.
FT MOD_RES 1139 1139 Phosphotyrosine (by autocatalysis) (By
FT similarity).
FT MOD_RES 1247 1247 Phosphotyrosine (by autocatalysis) (By
FT similarity).
FT CARBOHYD 68 68 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 125 125 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 187 187 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 259 259 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 530 530 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 571 571 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 629 629 N-linked (GlcNAc...) (Potential).
FT VARIANT 658 659 V -> E (in oncogenic NEU).
FT VARIANT 659 659 V -> E (in oncogenic NEU).
SQ SEQUENCE 1254 AA; 138252 MW; 974C3791C21F2BE1 CRC64;

Query Match 88.1%; Score 5894.5; DB 1; Length 1254;
Best Local Similarity 87.7%; Pred. No. 1.4e-298;
Matches 1081; Conservative 57; Mismatches 93; Indels 1; Gaps 1;

Qy 1 QVCTGTDMLRLPASPEHLDMLRLHYQGVVQVQGNLELTYPNATLSFLQDIQVQGY 60
Db 24 QVCTGTDMLRLPASPEHLDIVRHLYQGVVQVQGNLELTYPNATLSFLQDIQVQGY 83
Qy 61 VLIAHQVQVPLQRLIRVRGTQLFEDNYALVLDNGDPLNNTTPTVVGASPGGLRELQLR 120
Db 84 MLIAHSQVRHVPLQRLIRVRGTQLFEDNYALVLDNRDPLDNTTATGRTPEGLRELQLR 143
Qy 121 SLTEILKGGVLIQNPQLCYQDTILMKDIFHKNNQLALTIDNRSRACPCPMCKGSR 180
Db 144 SLTEILKGGVLIQNPQLCYQDTILMKDIFHKNNQLALTIDNRSRACPCPMCKGSR 203
Qy 181 CWGESSEDCOSLRTRTVCAAGCARCKGPLPTDCCHECAAGCTGPKISDCLACLFHNSGI 240
Db 204 CWGASPEDCQTLTGTTAPRAVPAARARLPDCCHECAAGCTGPKISDCLACLFHNSGI 263
Qy 241 CELHCPALVTYNTDTFTESMPNPEGRVTFGASCVTACPYNYLSTDVSGCTLVCPHNOEVT 300
Db 264 CELHCPALVTYNTDTFTESMPNPEGRVTFGASCVTACPYNYLSTDVSGCTLVCPHNOEVT 323

```


QY 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTORCEKSKPCARVCYGLGMEHLRGARAITSANIQEFAGCKKIFGSLAFLPESFDG 383
QY 361 DPASNTAPLOPELOVFTLEETITGVLYISAWPDSLPLDVSFONQLOVIRGRILHNGAYSL 420
Db 384 NPSSGTAFTPEQLQVFTLEETITGVLYISAWPDSLHLSVFNQLRVIRGRVLDHNGAYSL 443
QY 421 TLQGLGTSWLGSLRLSRELGLSLAIHNNTHLCFVHTVPWDQDLFRNPHQALLHTANRPEDE 480
Db 444 ALQGLGIRWLGSLRLSRELGLSLVLRNTHLCFVHTVPWDQDLFRNPHQALLHSGNPFSEE 503
QY 481 CVGEGLACHOLCARGHCWGPPTQCVNCSQFLRGQCBECRVLQGLPREYNARHCLPC 540
Db 504 CGLKDFACYPLCARGHCWGPPTQCVNCSHFLRGQCBECRVLQGLPREYVNGKHLPC 563
QY 541 HPSCQPNQSVTCFGEADQCVACAHKDPFPCVACRCPGVKPDLSYMPWKFPPDEEGAC 600
Db 564 HPSCQPNQSVTCFGEADQCVACAHKDPFPCVACRCPGVKPDLSYMPWKFPPDEEGAC 623
QY 601 QPCPINCTHSCVDLDDKGCPEAQASPLTSIVSAVVGILLVWVGVVGLIKRRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGCPEAQASPLTSIVSAVVGILLVWVGVVGLIKRRQOKIR 683
QY 661 KYTWRRLLQETELVEPLTPSGAMPNQAMRILKTELKVKVGLGSGAFGVYKGIWIPDG 720
Db 684 KYTWRRLLQETELVEPLTPSGAMPNQAMRILKTELKVKVGLGSGAFGVYKGIWIPDG 743
QY 721 ENKIPVAIKVLRNTSPKANKIILDEAYVMAGSPYVSRLLGICLTSTVQLVTLQMPY 780
Db 744 ENKIPVAIKVLRNTSPKANKIILDEAYVMAGSPYVSRLLGICLTSTVQLVTLQMPY 803
QY 781 GCLLDHVRENRGLSGDQLNWCQIAKMSYLEDVRLVHRDLAARNVLKSPNHVKITD 840
Db 804 GCLLDHVRENRGLSGDQLNWCQIAKMSYLEDVRLVHRDLAARNVLKSPNHVKITD 863
QY 841 FGLARLLDIDETEHADGGKVPKWALESILRRRTHQSDVMSYGVYVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVPKWALESILRRRTHQSDVMSYGVYVWELMTFGAKPY 923
QY 901 DGIPAREIPDLLEKGERLPPOPICTIDVYMWKWMIDSECRPRFRELVSERFARMARDP 960
Db 924 DGIPAREIPDLLEKGERLPPOPICTIDVYMWKWMIDSECRPRFRELVSERFARMARDP 983
QY 961 QRFVVIQNEIDLGASPLDSTFYRSLLEDDDMGDLVDAEYLVPOQGFPPDPAPGAGMW 1020
Db 984 QRFVVIQNEIDLGASPLDSTFYRSLLEDDDMGDLVDAEYLVPOQGFPPDPAPGAGMW 1043
QY 1021 HRRHRSSTRSGGDLTLGLEPSEEEAPRPLAPSEGAGSDVFDGDLGMGAAGLQSLPT 1080
Db 1044 HRRHRSSTRSGGDLTLGLEPSEEEAPRPLAPSEGAGSDVFDGDLGMGAAGLQSLPT 1103
QY 1081 HDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1140
Db 1104 RDLSPQLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTLPSPGNKGVVQVAPFGGAVENPEYLTPOGGAAPQHPHPPAPSPAFDNLVYV 1200
Db 1164 GATLERAKTLPSPGNKGVVQVAPFGGAVENPEYLTPOGGAAPQHPHPPAPSPAFDNLVYV 1222
QY 1201 DQDPPERGAPSTPKGTPTAENPEYLGDLVDPV 1232
Db 1223 DQDPPERGAPSTPKGTPTAENPEYLGDLVDPV 1254

RESULT 8
Q6ZPE0 PRELIMINARY; PRT; 1305 AA.
AC Q6ZPE0
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE MKIAA3023 protein (Fragment).
GN Name=mkIAA3023;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Embryonic tail;
RX PubMed=14621295;
RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
Saga Y., Nagase T., Ohara O., Koga H.;
RT "Prediction of the coding sequences of mouse homologues of KIAA gene:
III. the complete nucleotide sequences of 500 mouse KIAA-homologous
cDNAs identified by screening of terminal sequences of cDNA clones
randomly sampled from size-fractionated libraries.";
RL DNA Res. 10:167-180(2003).
DR EMBL; AK129487; BAC98297.1;
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin repeat.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow fac recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot Kinase.
DR InterPro; IPR002290; Ser thr kinase.
DR InterPro; IPR001245; Tyr kinase.
DR InterPro; IPR008266; Tyr kinase_AS.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00669; Pkinase; 1.
DR Pfam; PF01030; Recep_L domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot Kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00220; S_TKC; 1.
DR SMART; SM00219; TyKc; 1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS00011; PROTEIN KINASE DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase.
FT NON_TER 1
SQ SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;

Query Match 87.8%; Score 5877.5; DB 2; Length 1305;
Best Local Similarity 87.6%; Pred. No. 1.1e-297;
Matches 1080; Conservative 56; Mismatches 96; Indels 1; Gaps 1;

QY 1 QVCTGTDMKRLIPASPETHLDMLRHYQGCQVVGQNLLELYPTWASLSFLQDIOEVQGY 60
Db 73 QVCTGTDMKRLIPASPETHLDMLRHYQGCQVVGQNLLELYPTWASLSFLQDIOEVQGY 132
QY 61 VLIAHNOVRQVQLRLIRVRGTQLPEDNYALVLDNGDPLNN-TTPVTGASPGGLRELQL 119
Db 133 MLIAHNRVXHPQLRLIRVRGTQLPEDKXALVLDNRDPLDNTVTAAPGRTPEGLRELQL 192
QY 120 RSLTEILKGGVLIQRNPQLCYQDTILWKDIFHNNQLALTIDTNRSRACHPCSPMKGS 179
Db 193 RSLTEILKGGVLIQRNPQLCYQDMVLWKDLVRKNNQLAPVMDTNRSRACPPCAPCKDN 252
QY 180 RCGESSEDCQSLTRTVCGAGCARCKGLPTCCCHQCAAGCTGPKHSDCLACLFHNHSG 239
Db 253 HCGGESPEDCQLTGITCTSGCARCKGRPLTCCCHQCAAGCTGPKHSDCLACLFHNHSG 312
QY 240 ICELHCPALVTYNTDTFFESMPNPEGRYTFGASCVTACPYNYLSTVDGSLVCPHLNQEV 299
Db 313 ICELHCPALVTYNTDTFFESMLNPEGRYTFGASCVTTCPYNYLSTVGSLVCPNNQEV 372
QY 300 TADGTQRCCKSKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFD 359

Db 373 TAEDGTORCEKCKPKAGVYGLGMEHLRGARAITSDNIQBFACKKIFGSLAFPSFD 432
 Qy 360 GDPASNTAPLOEQLOVFETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGRIHNGAYS 419
 Db 433 GNPSSGVAPLKEHLQVETLEEITGYLYISAWPESFDLSVFQNLQVIRGRIHNGAYS 492
 Qy 420 LTQGLGSIWGLSLRLSRLGSLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 479
 Db 493 LTQGLGSIHSLGSLRLSRLGSLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 552
 Qy 480 ECVGEGACHQLCARGHCWGPPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNAHCLP 539
 Db 553 ACGLGVLVNSLCARGHCWGPPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNAHCLP 612
 Qy 540 CHPECPQNGSVTCFGEADQCVACAHYKDPFPCVACPCSPKPDLSYMPIWKPDEGA 599
 Db 613 CHPECPQNSSETCYGSEADQCEACAHYKSSSCVACPCSPKPDLSYMPIWKPDEGI 672
 Qy 600 CQPCPINTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRRQKI 659
 Db 673 CQPCPINTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRRQKI 732
 Qy 660 RYKTMRLLOETELVEPLTPSGAMPNQAQWRILKTELKRVKVLGSGAFGVYKGIWIPD 719
 Db 733 RYKTMRLLOETELVEPLTPSGAMPNQAQWRILKTELKRVKVLGSGAFGVYKGIWIPD 792
 Qy 720 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 779
 Db 793 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 852
 Qy 780 YGCLLDHVRNHRGLSGODLLNWCQIAKMSYLEVRLVHRDLAARNVLKSPNHVKIT 839
 Db 853 YGCLLDHVRNHRGLSGODLLNWCQIAKMSYLEVRLVHRDLAARNVLKSPNHVKIT 912
 Qy 840 DFGILARLLDIDETEHADGGKVPKIMWALESIILRRTHQSDVWSYGVTVWELMTFGAKP 899
 Db 913 DFGILARLLDIDETEHADGGKVPKIMWALESIILRRTHQSDVWSYGVTVWELMTFGAKP 972
 Qy 900 YDGLPAREIPDLLEKGERLPPOPICTIDVYIMVWKMWIDSECRPRELVSFERNWARD 959
 Db 973 YDGLPAREIPDLLEKGERLPPOPICTIDVYIMVWKMWIDSECRPRELVSFERNWARD 1032
 Qy 960 PQRVVIQNEEDLGPASPLDSTFYRSLLDMDGMLVDAEYLVPOQGFPCDPAPGAGGM 1019
 Db 1033 PQRVVIQNEEDLGPASPLDSTFYRSLLDMDGMLVDAEYLVPOQGFPCDPAPGAGGM 1092
 Qy 1020 VHRHRSSTRSQGGDITLGLPSEEEAPRSPAPSEGAGSDVFDGLGMAKGLQSLP 1079
 Db 1093 AHRHRSSTRSQGGDITLGLPSEEEAPRSPAPSEGAGSDVFDGLGMAKGLQSLP 1152
 Qy 1080 THDPSPLQRYSEDPTVLPSETDGYVAPLTCSPQPEYVNOVDVVRQPPSPREGLPAARP 1139
 Db 1153 PHDLSPLQRYSEDPTVLPSETDGYVAPLTCSPQPEYVNOVDVVRQPPSPREGLPAARP 1212
 Qy 1140 AGATLERAKTSLPGKNGVWVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLXY 1199
 Db 1213 AGATLERAKTSLPGKNGVWVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLXY 1272
 Qy 1200 WDQPPRGERAPPSTFKGTPTAENPEYLGLDVVP 1232
 Db 1273 WDQNSSEQPPPTFEKTPTAENPEYLGLDVVP 1305

RESULT 9

BAC98297 PRELIMINARY; PRT; 1305 AA.
 AC BAC98297;
 DT 02-MAR-2004 (TrEMBLrel. 27, Created)
 DT 02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
 DT 02-MAR-2004 (TrEMBLrel. 27, Last annotation update)
 DE MKIAA3023 protein (fragment).
 GN MKIAA3023.
 OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
 RN NCBI_TaxID=10090;
 RP SEQUENCE FROM N.A.
 RC TISSUE=Embryonic tail;
 RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
 RA Saga Y., Nagase T., Ohara O., Koga H.;
 RT "Prediction of the Coding Sequences of Mouse Homologues of KIAA Gene:
 RT III. The Complete Nucleotide Sequences of 500 Mouse KIAA-homologous
 RT cDNAs Identified by Screening of Terminal Sequences of cDNA Clones
 RT Randomly Sampled from Size-fractionated Libraries.";
 RL DNA Res. 10:167-180(2003).
 DR EMBL; AK129487; BAC98297.1; -.
 FT NON TER 1
 SQ SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;

Query Match 87.8%; Score 5877.5; DB 2; Length 1305;
 Best Local Similarity 87.6%; Pred. No. 1.1e-297;
 Matches 1080; Conservative 56; Mismatches 96; Indels 1; Gaps 1;

Qy 1 QVCTGTDMLRLPASPTHLDMLRHLVQGCQVVGQNLLELTYPNLSLFLQDIQVQGY 60
 Db 73 QVCTGTDMLRLPASPTHLDMLRHLVQGCQVVGQNLLELTYPNLSLFLQDIQVQGY 132
 Qy 61 VLIAHNOVROVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNN-TTPVTGASPGGLRELQL 119
 Db 133 MLIAHNRVHVPLQRLRIVRGTLQFEDNYALAVLDNRDPLDNVTTAAGTPEGLRELQL 192
 Qy 120 RSITELKGVLIQRLPOLCYQDTILWKOIFHXNQALALTLIDNRSRACHPCSPMCKGS 179
 Db 193 RSLTEILKGVLIQRLPOLCYQDMVLWKDLVRKNQNLAPVDMDNRSRACHPCAPTCKDN 252
 Qy 180 RCWGESSEDCSLTRVTCAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSG 239
 Db 253 HCWGESPEDCQILTGITCTGSCARCKGRPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSG 312
 Qy 240 ICELHCPALVYNTDTFESMPNPEGRTVTCGACVTCAPYNYLSTDVGSCTLVCPHNOEV 299
 Db 313 ICELHCPALVYNTDTFESMLNPEGRTVTCGACVTCAPYNYLSTEVSCTLVCPHNOEV 372
 Qy 300 TAEDGTORCEKCKPKARVYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFPSFD 359
 Db 373 TAEDGTORCEKCKPKAGVYGLGMEHLRGARAITSDNIQEFAGCKKIFGSLAFPSFD 432
 Qy 360 GDPASNTAPLOEQLOVFETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGRIHNGAYS 419
 Db 433 GNPSSGVAPLKEHLQVETLEEITGYLYISAWPESFDLSVFQNLQVIRGRIHNGAYS 492
 Qy 420 LTQGLGSIWGLSLRLSRLGSLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 479
 Db 493 LTQGLGSIHSLGSLRLSRLGSLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 552
 Qy 480 ECVGEGACHQLCARGHCWGPPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNAHCLP 539
 Db 553 ACGLGVLVNSLCARGHCWGPPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNAHCLP 612
 Qy 540 CHPECPQNGSVTCFGEADQCVACAHYKDPFPCVACPCSPKPDLSYMPIWKPDEGA 599
 Db 613 CHPECPQNSSETCYGSEADQCEACAHYKSSSCVACPCSPKPDLSYMPIWKPDEGI 672
 Qy 600 CQPCPINTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRRQKI 659
 Db 673 CQPCPINTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRRQKI 732
 Qy 660 RYKTMRLLOETELVEPLTPSGAMPNQAQWRILKTELKRVKVLGSGAFGVYKGIWIPD 719
 Db 733 RYKTMRLLOETELVEPLTPSGAMPNQAQWRILKTELKRVKVLGSGAFGVYKGIWIPD 792
 Qy 720 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 779
 Db 793 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 852

780 YGCLLDVRENRRGLSQDILNWCQIAKMSYLEVDVRLVHRDLAARNLVKSPNHVKIT 839
853 YGCLLDVRENRRGLSQDILNWCQIAKMSYLEVDVRLVHRDLAARNLVKSPNHVKIT 912
840 DFLGLARLLDIDETEHADGGKVPKIKWALESLIRRRFTTHQSDVWSYGVTVWELMTFGAKP 899
913 DFLGLARLLDIDETEHADGGKVPKIKWALESLIRRRFTTHQSDVWSYGVTVWELMTFGAKP 972
900 YDGIPIAREPDLLEKGERLPDPPICITIDVYIMVNCWMDSECRPFRELVSEFSMARD 959
973 YDGIPIAREPDLLEKGERLPDPPICITIDVYIMVNCWMDSECRPFRELVSEFSMARD 1032
960 PORFVVIQNEGLGASPLDSTFVRSLLDDMDGLVDAAEYLVPOQGFPCPDAPCAGGM 1019
1033 PORFVVIQNEGLGASPLDSTFVRSLLDDMDGLVDAAEYLVPOQGFPCPDALGTGT 1092
1020 VHRHRSSTRSGGDLTLGLPSESEAPRSLAPSEGAGSDVFDGDLGMAKGLQSLP 1079
1093 AHRHRSSTRSGGDLTLGLPSESEAPRSLAPSEGAGSDVFDGDLGMAKGLQSLP 1152
1080 THDPSFLORYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQVPRPQPPFRGGLPAARP 1139
1153 PHDLSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQVPRPQPPFRGGLPAARP 1212
1140 AGATLERAKTLSPGKNGVKDVFAGGAVENPEYLTPOGGAAPQPPHPPAFSPAFDNLVY 1199
1213 AGATLERAKTLSPGKNGVKDVFAGGAVENPEYLTPOGGAAPQPPHPPAFSPAFDNLVY 1272
1200 WDQPPFERGAPSTFFGTPTAENPEYLGLDVVPV 1232
1273 WDQNSSEQPPSTFFGTPTAENPEYLGLDVVPV 1305

RESULT 10

Q8C0E7 PRELIMINARY; PRT; 881 AA.
AC Q8C0E7;
DT 01-MAR-2003 (T-EMBLrel. 23, Created)
DT 01-MAR-2003 (T-EMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (T-EMBLrel. 26, Last annotation update)
DE Mus musculus 13 days embryo male testis cDNA, RIKEN full-length
DE enriched library, clone:6030449P08 product:v-erb-b2 erythroblastic
DE leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene
DE homolog (avian), full insert sequence. (Fragment).
GN Name=ErbB2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=99279253; PubMed=10349636;
RA Carninci P., Hayashizaki Y.;
RT "High-efficiency full-length cDNA cloning.";
RL Meth. Enzymol. 303:19-44(1999).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=21085660; PubMed=11217851;
RA RIKEN FANTOM Consortium;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA The FANTOM Consortium,
RA the RIKEN Genome Exploration Research Group Phase I & II Team;
RT "Analysis of the mouse transcriptome based on functional annotation of
RT 60,770 full-length cDNAs.";
RL Nature 420:563-573(2002).
RN [4]
RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20499374; PubMed=11042159;
RA Carninci P., Shibata Y., Hayateu N., Sugahara Y., Shibata K., Itoh M.,
RA Konno H., Okazaki Y., Muramatsu M., Hayashizaki Y.;
RT "Normalization and subtraction of cap-trapper-selected cDNAs to
RT prepare full-length cDNA libraries for rapid discovery of new genes.";
RL Genome Res. 10:1617-1630(2000).
RN [5]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20530913; PubMed=11076861;
RA Shibata K., Itoh M., Aizawa K., Kitsumi T., Tashiro H., Itoh M.,
RA Konno H., Akiyama J., Nishi K., Kitsumi T., Nishine T., Harada A.,
RA Sumi N., Ishii Y., Nakamura S., Hazama M., Ikegami T., Kashiwagi K.,
RA Yamamoto R., Matsumoto H., Sakaguchi S., Izawa M., Ohara E., Kawai J.,
RA Fujisawa S., Inoue K., Togawa Y., Ozawa K., Tanaka T., Matsura S., Kawai J.,
RA Onodera Y., Ishikawa T., Kato K., Kira A., Hayashizaki Y.;
RT "RIKEN integrated sequence analysis (RISA) system-384-format
RT sequencing pipeline with 384 multicapillary sequencer.";
RL Genome Res. 10:1757-1771(2000).
RN [6]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,
RA Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,
RA Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,
RA Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
RA Kato H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,
RA Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,
RA Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,
RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,
RA Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
RA Tagawa A., Toyota T., Yasunishi A., Muramatsu M., Hayashizaki Y.;
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AK031542; BAC27442.1; -;
DR HSSP; P06494; 1N8Y.
DR MGD; MGI:95410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006212; Furin_repeat.
DR InterPro; IPR009030; Growth_factor_recept.
DR InterPro; IPR011009; Kinase_like.
DR InterPro; IPR000719; Prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Recept_L_domain; 1.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 2.
DR SMART; SM00219; Tyrc; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00111; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
FT NON TER 1
SQ SEQUENCE 881 AA; 97500 MW; 5D5042BE9F8F0836 CRC64;
Query Match 62.8%; Score 4207; DB 2; Length 881;
Best Local Similarity 88.1%; Pred. No. 7.3e-211;
Matches 776; Conservative 40; Mismatches 65; Indels 0; Gaps 0;
QY 352 AFLPESFDGDPASNTAPLQPEQLQVFETLEETIGVLYISAWPDSLPLDSFQNLQVIRGR 411
DB 1 AFLPESFDGDPASNTAPLQPEQLQVFETLEETIGVLYISAWPESFDLSFQNLQVIRGR 60
QY 412 ILHNGAYSLTQGLGISWTLGLSLRELGLSLHHTLHLCFVHTVTPDQLFRNPHQALL 471

[illegible]

RESULT 11

Q9QX70	Q9QX70	PRELIMINARY;	PRT; 1209 AA.
1C	Q9QX70		
AD	Q9QX70;		
ID	Q9QX70;		
DT	01-MAY-2000 (TReMBLrel. 13, Created)		
DT	01-WAY-2000 (TReMBLrel. 13, Last sequence update)		
DT	01-WAY-2000 (TReMBLrel. 13, Last sequence update)		
DT	01-WAR-2004 (TReMBLrel. 26, Last annotation update)		
DE	Epidermal growth factor receptor.		
GN	Name=Egfr;		
OS	Rattus norvegicus (Rat).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.		
OX	NCBI_TaxID=10116;		
OX	[1]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=Fisher; TISSUE=Liver;		
RC	MEDLINE=90258888; PubMed=2342466;		
RX			
QY	1 QYCTGDMKRLRPASPETHLDMLRHLHYOGCQVQGNELTYLPTNASISFLQIDIOEVGY 60		
Db	29 KVCQGTSNRLTQLGTGFDFHFLSLQRMFNNCVFLNGNLEITYVQRNYDLSFLKTIQIEVAGY 88		
QY	61 VLIAHNOVQVPLQRLIRVGRQTFEDNVALAVLDNGPLANNTPVTGCASFGGIRELOLR 120		
Db	89 VLIALTNTVERIPLENLQIRGNALYENTYVALAVLSN-----YGTNKTGLRELPMR 138		
QY	121 SITEILKGVGLIQRNPOLCYQDTILWKDILPHKNQOLALTLDITNRS-RACHPCSPWCKGS 179		
Db	139 NLQEILIGAVRFSNNPILCNMETIQMRDIV-QDVFLSNNMDVQRHLHLCGPCKCDPSPNG 197		
QY	180 RCWGESSDCQSLTRTVCAAGCA-RCKGPLPDDCCHEQCAGACTGPKHSDCIACLHFHNS 238		
Db	198 SCWGRGEENCQKLTIIICQQCSRRRCGRSPSDCCNQAAGCTGPRESDCILVCHRFRDE 257		

QY 239 GICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPVNYLSTDVSGCTLVCPHLNQE 298
Db 258 ATCKDTCPPLMLNPTTYQMDVNPBGKISFGATCVKCKPNYVVTTHGSCVACGPDYIE 317
QY 299 VTAEDGTQRCCKSKFCARCYCYGLGHEHREVAITSANIQEPAGCKKIFGSLAFLPESP 358
Db 318 V-BEDGVSKCKCDGPKCKVNCGIGIGEFKDTLSINATNIKFKYKTAISGDLHLIPVAF 376
QY 359 DGPASNTAPLOEQLOVFTLEBITGYLYISAWPDSLPDLVSFQNLQVIRGILHNGAY 418
Db 377 KGDSFTRTPDLPRELEILKTVKEITGFLLIQWPNWTDLHAFENLEIIRGTRKQGO 436
QY 419 SLTQGLGSLWGLRLSRLGSLGLALHNTLHCFVHTVPWDLFRNPHQALLHTANRPE 478
Db 437 SLAVGUNTSLGRSLKSLSDGDIISGNRNLCYANTINWKLFGTPNQTKIMNRAB 496
QY 479 DECVGELACHQICARGHCGPGPTQVNCQSLRGQECVECRVLQGLPREYVYNARHCL 538
Db 497 KCKCATNHVNCPLCSSEGCWGPPTDCVSCQVNSRGRECVDKCNILEGEPRFVENSECI 556
QY 539 PCHPECPQNGSVTCFGEPAQCVCAHYKDPFCVAPCPGSKVPLSLWPIWKPDPDEG 598
Db 557 QCHPECLPQMTNITCGRGDNCIKAHYVDGPHCVKTCFSGIMGENNTL-VMKFADANN 615
QY 599 ACQPCPINCTHSCVDLDDKGPACQORASP-LTSIVSAVVGILLAVVLGVVFGI-LIKRQ 656
Db 616 VCHLCHANCTYGCAGLKGCC--QQEGPKIPISIAIGVGLLFIVV-VALGIGLPMRR 672
QY 657 QKIRKYMRLLOETELVELPTSPGAMPQAQWRIKTELKRVKVLGSGAFGVYKGIW 716
Db 673 QLVKRTLRLLQERELVELPTSGEAPQAHLRIKTEFKKIVLGSAGFVYKGLW 732
QY 717 IPGENVKPVAKVIRENTSPKANKEILDVAVMAGVSGPYVRLGLICLSTVOLVTO 776
Db 733 IPGEKVKIPVAKELREATSPKANKEILDVAVMASVDNPHVCRLLGLICLSTVOLITQ 792
QY 777 LMPYGCILHVRNCRGLSQDLNMCQIAKMSYLEVRLVHRDLAARNVLVKS PNHV 836
Db 793 LMPYGCILDYVRHKONIGSYLNNWCQIAKGNLYEDRRLVHRDLAARNVLVKTPOHV 852
QY 837 KITDFGLARLLDIDETEYHADGGKVPKWMALLESILRRRFTHOSVMSYGVTVWELMTFG 896
Db 853 KITDFGLAKLLGAEKEYHAEGKVPKWMALLESILHRIYTHQSDVMSYGVTVWELMTFG 912
QY 897 AKPYDGIPIABEIPDLLEKGERLPQPICTIDVYMWKCMIDSECRPRFELVSEFSRM 956
Db 913 SKPYDGIPIABEISSILEKGERLPQPICTIDVYMWKCMIDSECRPRFELVSEFSRM 972
QY 957 ARDPQRFVVIQ-NEDLGPASPLDSTFVRSILLEDDMDGLVDABEYLVPOQGPCPPAPG 1015
Db 973 ARDPQRYLVIOGDERMHLSPSTNSFYRALMEEDMEDVVDADYLIPOQGF----- 1025
QY 1016 AGMVHHRHSRSTGGGDLTLGLPESEAPRSLAPSEGASDVDFDGLMGAAKGL 1075
Db 1026 -----NSPST-----SRTPLLSLSANSN-----SSTVACINRN 1054
QY 1076 QSLPHTDPPELQRYSEDPVPLPSET--DGYVAPLTCSPQPEYVNGQDVRPQPPSPREG 1133
Db 1055 GSCRVEDAPLQRYSEDPVPLPSET--DGYVAPLTCSPQPEYVNGQDVRPQPPSPREG 1107
QY 1134 LPAARAGATLERAKTSLPKNGKWDVAFAGAVENPEYL-TPOCGAAPQHPPPAFSP 1192
Db 1108 VYHQPLHP-----AFGRDLHYQN--PHSNVSNPEYLVNTAQ-----PTCLSL 1148
QY 1193 AFONLYWYDQ-----DP-----PERGAPPSTFKGTPTAENPEYLGIDVP 1231
Db 1149 GFDSSALWIKQSHQSLNDPNYQQDFFPKAEKPNIGFKG-PTAENAEYLRVAPP 1202

RESULT 12

Q80Y89

ID Q80Y89

AC Q80Y89;

PRELIMINARY;

PRT; 711 AA.

DT 01-JUN-2003 (TREMELrel. 24, Created)
DT 01-JUN-2003 (TREMELrel. 24, Last sequence update)
DT 05-JUL-2004 (TREMELrel. 27, Last annotation update)
DE Erbb2 protein.
GN Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RX MEDLINE=22388257; PubMed=1247932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G., Schuler G.D.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Ustin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettner M., Madan A., Rodriguez S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmitz J., Myers R.M., Butterfield Y.S.,
RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (FEB-2003) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (JUN-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC046811; AH46811.1; --
DR EMBL; BC053078; AAH53078.1; --
DR HSSP; P06494; IN8Y.
DR MGD; MGI:95410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow fac_recept.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR SMART; SM00261; FU; 4.
SQ SEQUENCE 711 AA; 78707 MW; 682B188EB0E71318 CRC64;
Query Match 47.2%; Score 3159.5; DB 2; Length 711;
Best Local Similarity 84.4%; Pred. No. 21e-156;
Matches 569; Conservative 41; Mismatches 63; Indels 1; Gaps 1;
QY 1 QVCTGTDMKRLPASPETHDMLRHLHYGQCQVQGNLELTLYPTNASTLFLQDIQEVQY 60
Db 24 QVCTGTDMKRLPASPETHDMLRHLHYGQCQVQGNLELTLYPTNASTLFLQDIQEVQY 83
QY 61 VLIHANNVQVLPQRLIRIVRGTLFEDNVALAVLNGDPLNN-TTPVTGASFGGLRELQ 119
Db 84 MLIAHNRVHKVPLQRLIRIVRGTLFEDNVALAVLNGDPLNN-TTPVTGASFGGLRELQ 143
QY 120 RSLTEILKGVLIQNRNPOLCYQDTTLWKDIFHKNQLALTLLIDTNRSRACHPCSPMKGS 179
Db 120 RSLTEILKGVLIQNRNPOLCYQDTTLWKDIFHKNQLALTLLIDTNRSRACHPCSPMKGS 179

Db 144 RSLTEILKGGVIRGNPOLCQDMVLWKDVLKKNQLAPVMDNTNRSRACPPCAPTKCN 203
Qy 180 RCMGESSEDCQSRLTRTCAGGCAKCGPLPTDCHEQCAAGCTGPHSDCLACLFHNSG 239
Db 204 HCWGESPEDCQLTGTICTSGCAKCGRLPTDCHEQCAAGCTGPHSDCLACLFHNSG 263
Qy 240 ICELHCALVTYNTDTPESHPNPEGRYTFGASCVTTCFYNLSTEVGSCITLVCPPNNQEV 299
Db 264 ICELHCALVTYNTDTPESHPNPEGRYTFGASCVTTCFYNLSTEVGSCITLVCPPNNQEV 323
Qy 300 TAEDGTORCKSKPCARVCYGLGMEHLREVRATSVANIOEFAGCKIFGSLAFLESFD 359
Db 324 TAEDGTORCKSKPCAGVYGLGMEHLRGARAITSDNIOEFAGCKIFGSLAFLESFD 383
Qy 360 GDPASNTAPLQPEOLQVFETLEETIYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYS 419
Db 384 GNPSSGVAPLKPHEHLQVFETLEETIYLYISAWPESFQDLVSFQNLRVIRGRILHNGAYS 443
Qy 420 LTLQGLISWLGRLSRELGSGLAIHNTHLFCFVHTVPWDQLFRNPQALLHTANRPED 479
Db 444 LTLQGLIHSGLRSLRELGSGLAIHNTHLFCFVHTVPWDQLFRNPQALLHSGNRPEE 503
Qy 480 ECVGEGILACQHCARGCWGPGTQCVNCSQFLRGQECVEECVLOGLPREYVNAHCLP 539
Db 504 ACGLEGVLVNSLCARGHCWGPGTQCVNCSQFLRGQECVEECVLOGLPREYVNAHCLP 563
Qy 540 CHPECPQNGSVTCFGEADQCACAHYKDPFPCVACRPSGVKPDLSYMPIWKFPPDEGA 599
Db 564 CHPECPQNSECYGSEADQCEACAHYKDSVSCVACRPSGVKPDLSYMPIWKFPPDEGI 623
Qy 600 CQPCPINCTHSCVDLDDKGPACQASPLTSIVSAVGLLVVGLVGVVGLIKRRQOKI 659
Db 624 CQPCPINCTHSCVDLDBRGCPAQRASPVFTIATVGVGLLVVGLVGVVGLIKRRQOKI 683
Qy 660 RKYTMRLLOETEL 673
Db 684 RKYTMRLLOETEV 697

RESULT 13
EGFR_HUMAN STANDARD; PRT; 1210 AA.
ID P00533; O00688; O00732; P06268; Q14225; Q92795; Q9BZS2; Q9GZX1;
AC Q9H2C9; Q9H3C9; Q9UMD7; Q9UMD8; Q9UMG5;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Epidermal growth factor receptor precursor (EC 2.7.1.112) (Receptor
protein-tyrosine kinase ErbB-1).
GN Name=EGFR; Synonyms=ERBB1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
[1]
SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=84219729; PubMed=6328312;
RA Ullrich A., Coussens L., Hayflick J.S., Dull T.J., Gray A., Tam A.W.,
Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downward J.,
Mayer E.L.V., Whittle N., Waterfield M.D., Seeburg P.H.;
RT "Human epidermal growth factor receptor cDNA sequence and aberrant
expression of the amplified gene in A431 epidermoid carcinoma cells";
RL Nature 309:418-425(1984).
RN [2]
SEQUENCE FROM N.A. (ISOFORM 2).
RC TISSUE=Placenta;
RX MEDLINE=95382957; PubMed=7654368;
RA Ilekis J.V., Stark B.C., Scoccia B.;
RT "Possible role of variant RNA transcripts in the regulation of
epidermal growth factor receptor expression in human placenta";
RL Mol. Reprod. Dev. 41:149-156(1995).
RN [3]
SEQUENCE FROM N.A. (ISOFORM 2).

RC TISSUE=Placenta;
RX MEDLINE=97078686; PubMed=8918811;
RA Reiter J.L., Maihle N.J.;
RT "A 1.8 kb alternative transcript from the human epidermal growth
factor receptor gene encodes a truncated form of the receptor.";
RL Nucleic Acids Res. 24:4050-4056(1996).
RN [4]
SEQUENCE FROM N.A. (ISOFORM 2).
RC TISSUE=Placenta;
RX MEDLINE=97256547; PubMed=9103388;
RA Ilekis J.V., Gariel J., Niederberger C., Scoccia B.;
RT "Expression of a truncated epidermal growth factor receptor-like
protein (TEGFR) in ovarian cancer.";
RL Gynecol. Oncol. 65:36-41(1997).
RN [5]
SEQUENCE FROM N.A. (ISOFORMS 3 AND 4).
RC TISSUE=Placenta;
RX MEDLINE=21100872; PubMed=11161793; DOI=10.1006/geno.2000.6341;
RA Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Daniels A.J.,
Schehl Sinclair C., Pearse R.S., Green P.J., Yee D., Lampland A.L.,
Balasubramanian S., Crossley T.D., Magnuson T.R., James C.D.,
Maihle N.J.;
RT "Comparative genomic sequence analysis and isolation of human and
mouse alternative EGFR transcripts encoding truncated receptor
isoforms.";
RL Genomics 71:11-20(2001).
RN [6]
SEQUENCE FROM N.A. (ISOFORM 1), AND VARIANTS GLN-98; ARG-266; LYS-521;
LLE-574; GLY-962 AND PRO-988.
RA Livingstone R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,
Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,
Sherwood J.K., Sherwood A.M., Leithausen B.J., Nickerson D.A.;
RT "NIH-SNPs, environmental genome project. NIHES ES15478, Department
of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.
RN [7]
SEQUENCE OF 575-687 FROM N.A.
RA Reiter J.L., Threadgill D.W., Daniels A.J., Schehl C.M.,
Lampland A.L., Balasubramanian S., Crossley T.O., Magnuson T.R.,
Maihle N.J.;
RT "Human and mouse alternative EGFR transcripts encoding only the
extracellular domain of the receptor.";
RL Submitted (FEB-1999) to the EMBL/GenBank/DBJ databases.
RN [8]
SEQUENCE OF 713-924 FROM N.A.
RX MEDLINE=84196372; PubMed=6326261;
RA Lin C.R., Chen W.S., Krueger W., Stolarsky L.S., Weber W., Evans R.M.,
Verma I.M., Gill G.N., Rosenfeld M.G.;
RT "Expression cloning of human EGF receptor complementary DNA: gene
amplification and three related messenger RNA products in A431
cells";
RL Science 224:843-848(1984).
RN [9]
SEQUENCE OF 150-962 FROM N.A.
RX MEDLINE=84245835; PubMed=6330563;
RA Xu Y.H., Iehi S., Clark A.J.L., Sullivan M., Wilson R.K., Ma D.P.,
Roe B.A., Merlino G.T., Pastan I.;
RT "Human epidermal growth factor receptor cDNA is homologous to a
variety of RNAs overproduced in A431 carcinoma cells";
RL Nature 309:806-810(1984).
RN [10]
SEQUENCE OF 1028-1210 FROM N.A.
RX MEDLINE=85046483; PubMed=6093780;
RA Simmen F.A., Gope M.L., Schulz T.Z., Wright D.A., Carpenter G.,
O'Malley B.W.;
RT "Isolation of an evolutionarily conserved epidermal growth factor
receptor cDNA from human A431 carcinoma cells";
RL Biochem. Biophys. Res. Commun. 124:125-132(1984).
RN [11]
SEQUENCE OF 1-29 FROM N.A.
RX MEDLINE=88217333; PubMed=3329716;
RA Haley J.D., Whittle N., Bennett P., Kinchington D., Ullrich A.,
Waterfield M.D.;

Db 672 HIVKRTLRLLQLRELVEPLTPSGEAPNOALLILKETETKIKVLGSAFGTVYKGLW 731

Qy 717 IPDGENVKIPVAIKVIRENTSPKANKELIDAEYVWAGVSGPYVSRLLIGICLTSTVQLVQ 776

Db 732 IPEGEKVKIPVAIKELREATSPKANKELIDAEYVWASVDNPHVCRLLIGICLTSTVQLITQ 791

Qy 777 LMPYGCILLDHRVNRGRGLSODLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHV 836

Db 792 LMPFGCLLDVYVREHKDNIQSOYLLNWCQIAKGNVLEDRRLVHRDLAARNVLKTPQHV 851

Qy 837 KITDFGLARLLDIDETEVHADGGKVPKMWALESIILARRFTHQSDVMSYGVTVWELMTFG 896

Db 852 KITDFGLAKLLGAEKEYHABGGKVPKMWALESIILHRIYTHQSDVMSYGVTVWELMTFG 911

Qy 897 AKPYDGIPIAREIPDLLEKGERLPPOPICTIDVYMWKMWIDSECRPRFRELVSFSRM 956

Db 912 SKPYDGIPIASEISSILEKGERLPPOPICTIDVYMWKMWIDADSPKRELIIIESKM 971

Qy 957 ARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPOQGFPCPDPA 1015

Db 972 ARDPQRYLVIQGDERMHLPSPTDSNFYRALMDEEDMDVDAEYLVPOQGF 1024

Qy 1016 AGMWVHRHRSSTRSGGDLTLGLPSEAEAPRSLAPSEGAGSDVDFDGLNGAAKGL 1075

Db 1025 -----SSPSTSRTPLLSLSLTSN--NSTVACIDRNL 1055

Qy 1076 QSLPHTDPSPLQRYSDPTVPLPSET--DGVAPLTCSPOPEYVQVDPVPPSPREGP 1133

Db 1056 QSCPIKEDSFQRYSSDPTGALTEDSIDDTFL-----PVPEYINQ-SVPRPAGSVQNP 1108

Qy 1134 LPAARPGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYL-TPQGAAPQPHPPAFSP 1192

Db 1109 VYHNOPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149

Qy 1193 AFDNLYYWDQ-----DP-----PERGAPPSTFKGTPTAENPEYL 1226

Db 1150 TFDSPAHAQKSHQISLDNPDYQDFFPKPEAKNGIFKGS-TAENAEYL 1198

RESULT 14

AAS83109 PRELIMINARY; PRT; 1210 AA.

AC AAS83109; DT 14-APR-2004 (TrEMBLrel. 27, Created)

DT 14-APR-2004 (TrEMBLrel. 27, Last sequence update)

DT 14-APR-2004 (TrEMBLrel. 27, Last annotation update)

DE Epidermal growth factor receptor (Erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian).

GN EGFR.

OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

OX NCBI_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A.

RA Livingston R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N., Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S., Sherwood J.K., Sherwood A.M., Leithauser B.J., Nickerson D.A.; Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.

DR EMBL; AY588246; AAS83109.1; -.

KW Receptor.

SQ SEQUENCE 1210 AA; 134276 MW; D8A2A50B4EFB6ED2 CRC64;

Query Match 47.18; Score 3155; DB 2; Length 1210;

Best Local Similarity 49.94; Pred. No. 6.6e-156;

Matches 624; Conservative 177; Mismatches 345; Indels 104; Gaps 20;

Qy 1 QVCTGTDMKLRLPASPELHMLRLHLYQCGQVQGNLELTVLPTNAGSLFLQDIQEVQY 60

Db 29 KVCQGTSNKLTQLGTFFEDHFLSLQRMFNCVVLGNLEIYVQENYDLSFLKTIQEVAGY 88

Qy 61 VLIAHNOVRQVPLORLIRVGTQLFEDNYALVLDNGDPLNNTTPTVGTASPGGLRELQLR 120

Db 89 VLIALNTVERIPLENLQIIRGNMYENSYALAVLSNYD-----ANKTGLKELPMR 138

Qy 121 SLTEILKGGVLIQRNPOLCYQDITLWKDIFHKNQALALTLDITNRSBACHPCSPMKGSR 180

Db 139 NLGEILHGAVRFNNPALCNVESIQWRDIVSSDFLSNMSDFQNHLSGCKQKDCPCNGS 198

Qy 181 CWGESSEDCOSLRTRTVCAAGCA-RCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSG 239

Db 199 CWGAGEBNCQKTKIICAQCSGRCRGSPSDCHNOCAAGCTGPRSDCLVCRKFRDEA 258

Qy 240 ICLHCPALVTYNTDFTESMPNPEGRTYFQASCVTACPYNYLSTDVSGSCTLVCLPHNQEV 299

Db 259 TKDTCPPPLMLNPTTYQMDVNPNEGKYSFGATCVKCKPRNYVYVTDHSGSVRACGADSYEM 318

Qy 300 TADGTGTCRCKSKPCARVCYIGMEHLREVRAVTSANIOEFAGCKKIFGSLAFLPESFD 359

Db 319 -EDGVKCKKCGPCRKVCNGIGIGEFKDSLSINATNIHKFNCTSIISGLHILPVAFR 377

Qy 360 GDPASNTAPLQBPQLQVFEITLGYLYISAWPDSLPLDLSVFQNLQVIRGRILHNGAYS 419

Db 378 GDSFTHTPPLDPOELDILKTVKEITGFLLIQAMPENRTDLHAFENLEIRGRTKHQHQS 437

Qy 420 LTOGLGIGISWIGLRSRELGSGLALIHNTLHLCFVHTVPMQDLFRPHQALLHTANPDE 479

Db 438 LAVVSLNITSLGRLSRLKEISDGDVVISGNKNLCYANTINWKLLFGTSGQTKIISNRGEN 497

Qy 480 ECVGEGLACHOLCARGHCGPPTQCVCNCSQFLRGOSCEVEECRVLOGLPREYVNAHCLP 539

Db 498 SKATQOVCHALCSPGCGPEPRDCVSCRNVSRGRCVCKNLLEGEPRFVENSECICQ 557

Qy 540 CHPECFQNGSVTCFGEADQCACAHYKDPFPCVACRPSGVKPDLSYMPIWFKPDBEGA 599

Db 558 CHPECLPQAMNITTCGRGPDNCIQCAHYIDGPHCVKTCPAGVMGENNTL-VMKYADAGHV 616

Qy 600 CQCPINCTHSCVVDLDDKGPABQASPLTSIVSAVVG---ILLVVLGVVFGILIKRRQ 656

Db 617 CHLCHPNTYGTCTGPGLEGCTNGPKIP--SIATGMVALLLLVWALGIG---LFRMR 671

Qy 657 QKIRKYTMRLLQETELVELPTPSGAMPNOAQRILKETELRKVKVLGSGAFGVYKGIW 716

Db 672 HIVKRTLRLLQLRELVEPLTPSGEAPNOALLILKETETKIKVLGSAFGTVYKGLW 731

Qy 717 IPDGENVKIPVAIKVIRENTSPKANKELIDAEYVWAGVSGPYVSRLLIGICLTSTVQLVQ 776

Db 732 IPEGEKVKIPVAIKELREATSPKANKELIDAEYVWASVDNPHVCRLLIGICLTSTVQLITQ 791

Qy 777 LMPYGCILLDHRVNRGRGLSODLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHV 836

Db 792 LMPFGCLLDVYVREHKDNIQSOYLLNWCQIAKGNVLEDRRLVHRDLAARNVLKTPQHV 851

Qy 837 KITDFGLARLLDIDETEVHADGGKVPKMWALESIILARRFTHQSDVMSYGVTVWELMTFG 896

Db 852 KITDFGLAKLLGAEKEYHABGGKVPKMWALESIILHRIYTHQSDVMSYGVTVWELMTFG 911

Qy 897 AKPYDGIPIAREIPDLLEKGERLPPOPICTIDVYMWKMWIDSECRPRFRELVSFSRM 956

Db 912 SKPYDGIPIASEISSILEKGERLPPOPICTIDVYMWKMWIDADSPKRELIIIESKM 971

Qy 957 ARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPOQGFPCPDPA 1015

Db 972 ARDPQRYLVIQGDERMHLPSPTDSNFYRALMDEEDMDVDAEYLVPOQGF 1024

Qy 1016 AGMWVHRHRSSTRSGGDLTLGLPSEAEAPRSLAPSEGAGSDVDFDGLNGAAKGL 1075

Db 1025 -----SSPSTSRTPLLSLSLTSN--NSTVACIDRNL 1055

Qy 1076 QSLPHTDPSPLQRYSDPTVPLPSET--DGVAPLTCSPOPEYVQVDPVPPSPREGP 1133

Db 1056 QSCPIKEDSFQRYSSDPTGALTEDSIDDTFL-----PVPEYINQ-SVPRPAGSVQNP 1108

Qy 1134 LPAARPGATLERAKTLSPGKNGVVKDVFAFGGAVENPEYL-TPQGAAPQPHPPAFSP 1192

Db 1109 VYHNOPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149

QY 1193 AFNLYWDQ-----DP-----PERGAPPSTFKGTPTAENPEYL 1226
 Db 1150 TFDSPARWAQKSHQISLDPNDPYQDFFPKKAPNGIFKGS-TAENAEYL 1198

RESULT 15

ID QMIL8 PRELIMINARY; PRT; 1209 AA.

AC QMIL8;
 DT 01-OCT-2002 (T-EMBLrel. 22, Created)
 DT 01-OCT-2002 (T-EMBLrel. 22, Last sequence update)
 DT 01-MAR-2004 (T-EMBLrel. 26, Last annotation update)
 DE Epidermal growth factor receptor.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Kim J.G., Vallet J.L., Nonneman D., Christenson R.K.;
 RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AY117054; AAM77472.1; -
 DR HSSP; Q9H2C9; 1M17.
 DR GO; GO:0016020; C:membrane; IEA.
 DR GO; GO:0005524; F:ATP binding; IEA.
 DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
 DR GO; GO:0004872; F:receptor activity; IEA.
 DR GO; GO:0016740; F:transferase activity; IEA.
 DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
 DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
 DR InterPro; IPR000345; Cytochrome_B5.
 DR InterPro; IPR000494; EGFR_L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin repeat.
 DR InterPro; IPR009030; Growth factor receptor.
 DR InterPro; IPR011009; Kinase like.
 DR InterPro; IPR000719; Prot kinase.
 DR InterPro; IPR001245; Tyr_kinase.
 DR InterPro; IPR008266; Tyr_kinase_AS.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF01030; Recept_L domain; 2.
 DR PRINTS; PR00109; TYRKINASE.
 DR ProDom; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 5.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00180; CYTOCHROME C; UNKNOWN_1.
 DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
 DR PROSITE; PS00011; PROTEIN KINASE DOM; 1.
 DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
 KW ATP-binding; Kinase; Receptor; Transferase; Tyrosine-protein kinase.
 SQ SEQUENCE 1209 AA; 133531 MW; 268E3FB11E36F90P CRC64;

Query Match 47.0%; Score 3143.5; DB 2; Length 1209;
 Best Local Similarity 50.1%; Pred. No. 2.6e-155;
 Matches 625; Conservative 178; Mismatches 344; Indels 101; Gaps 21;

QY 1 QVCTGDMKRLPASBETHLMRLHYQGQVQVQGNLELYLTPTNASLSPLODIQVQY 60
 Db 29 KVCQGTSNKLTQLGTTFEDHFLSLQRMFNNEVVLGNLEITYMQNSYNLSFLKTIQEVAGY 88

QY 61 VLTAHNOVRQVPLQRLIRVGTQGLFEDNYALAVLDNGDPLNNTPTVTGASPGGLRELQRL 120
 Db 89 VLTAHNTVEKIPLENQLIGNVLYENTHALVLSN-----YGANKTGLRELPMR 138

QY 121 SLTEILKGGVLIQNPOLCYQDITLWKDIFPKNNQALTLITDNRACHPCSPMCKGSR 180
 Db 139 NLQEIQLQGVAFRFSNNPALCHAEISIQWEDIVNSDFLSNMSWDFQSLGSCPKDPCGLINGS 198

QY 181 CWGESSEDCQSLRTVTCAGGCA-CKGPLEPTDCCHQCQAGCTGPKHSDCLACLFHNHSG 239
 Db 199 CWGAGKENCQKLTKVTCQAQCSGRGRSPSCDCHNCAAGCTGPRSDCLVCRFRDEA 258

Search completed: January 25, 2005, 21:29:00
 Job time : 174.437 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:08:29 ; Search time 131.275 Seconds
(without alignments)
3366.641 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255
Perfect score: 6694
Sequence: 1 QVCTGDMKRLPASPETHL.....TPKGTPTAENPEYLGLDVVP 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:.*
1: Geneseq1980s:.*
2: Geneseq1990s:.*
3: Geneseq2000s:.*
4: Geneseq2001s:.*
5: Geneseq2002s:.*
6: Geneseq2003as:.*
7: Geneseq2003bs:.*
8: Geneseq2004s:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6694	100.0	1255	3 AAY92620	Aay92620 Human her
2	6694	100.0	1255	4 AAB60167	Aab60167 HER2 tran
3	6694	100.0	1255	4 AAE12130	Aae12130 Human tyr
4	6694	100.0	1255	5 AAE26349	Aae26349 Human HER
5	6694	100.0	1255	5 AAE26366	Aae26366 Human HER
6	6694	100.0	1255	5 AAU74545	Aau74545 Human HER
7	6694	100.0	1255	6 ABR47447	AbR47447 Breast ca
8	6694	100.0	1255	6 ABR47408	Abp74708 Human HER
9	6694	100.0	1255	6 AAE38390	Aae38390 Human c-e
10	6694	100.0	1255	6 ADA38143	Ada38143 Human erb
11	6694	100.0	1255	7 ADA37255	Ada37255 Human erb
12	6694	100.0	1255	7 ADB67621	Adb67621 Human epi
13	6694	100.0	1255	8 ADH13187	Adh13187 Human mal
14	6694	100.0	1255	8 ADM72831	Adm72831 Human HER
15	6694	100.0	1255	8 ADO20009	Ado20009 Human PRO
16	6688	99.9	1255	2 AAU01111	Aau01111 HER-2/neu
17	6688	99.9	1255	2 AAU92406	Aau92406 Human HER
18	6688	99.9	1255	3 AAY84780	Aay84780 Amino aci
19	6688	99.9	1255	3 AAB21198	Aab21198 Human HER
20	6688	99.9	1255	4 AAG88267	Agg88267 HER2/neu
21	6688	99.9	1255	4 AAB85458	Aab85458 Human HER
22	6688	99.9	1255	5 AAE20479	Aae20479 Human HER
23	6688	99.9	1255	5 AAU77114	Aau77114 Human HER
24	6688	99.9	1255	5 AAM51143	Aam51143 Human HER
25	6688	99.9	1255	5 AAE24067	Aae24067 Human HER

26	6688	99.9	1255	6 ABR43687	AbR43687 Human c-e
27	6688	99.9	1255	7 ABR82066	AbR82066 Human Her
28	6688	99.9	1255	7 ADC09593	Adc09593 Her2/Neu
29	6688	99.9	1255	7 ADD25484	Add25484 Binding d
30	6688	99.9	1255	7 ADE63281	Ade63281 Human Pro
31	6688	99.9	1255	7 ADE76190	Ade76190 Human HER
32	6688	99.9	1255	7 ADF45048	Adf45048 Human kin
33	6688	99.9	1255	8 ADJ66554	Adj66554 Her2 prot
34	6688	99.9	1255	8 ADL90083	Adl90083 Human Her
35	6688	99.9	1255	8 ADQ17193	Adq17193 Human sof
36	6677	99.7	1253	7 ADC35106	Adc35106 Human bre
37	6673	99.7	1255	8 ADM12582	Adm12582 Human Her
38	6672	99.7	1255	8 ADO38813	Ado38813 Human Her
39	6645	99.3	1433	2 AAR39568	Aar39568 Sequence
40	6642	99.3	1223	5 AAU98923	Aau98923 Human bre
41	6371	95.2	1200	3 AAB21208	Aab21208 Human HER
42	5899.5	88.1	1256	3 AAB21199	Aab21199 Rat HER-2
43	5899.5	88.1	1256	5 AAM51144	Aam51144 Rat Her-2
44	5895	88.1	1257	7 ABR82067	AbR82067 Rat Her2/
45	5895	88.1	1257	7 ADE63279	Ade63279 Rat Prote

ALIGNMENTS

RESULT 1
AAY92620
ID AAY92620 standard; protein; 1255 AA.
XX AC AAY92620;
XX DT 10-AUG-2000 (first entry)
XX DE Human heregulin 2 (Her2).
XX KW Heregulin 2; Her2; vaccination; cytotoxic T-lymphocyte immunity;
KW self-protein; cancer; breast cancer; prostate cancer;
KW cell-associated peptide antigen; foreign epitope.
XX OS Homo sapiens.
XX FH Key
FT Domain
FT FT /label= N-terminal
FT FT /note= "mature polypeptide"
FT FT Region
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FT FT /note= "suitable for foreign epitope insertion"
FT FT Region
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 Region 579..593
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 Domain 624..654
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 Region 632..652
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 Region 653..667
 /label= insertion region
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 Domain 655..1010
 /label= Tyrosine_kinase_domain
 Region 661..675
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 Region 695..709
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 Region 710..730
 /label= insertion region
 /note= "suitable for foreign epitope insertion"
 Domain 1011..1235
 /label= C-terminal_domain

WO200020027-A2.

13-APR-2000.

05-OCT-1999; 99WO-DK000525.

05-OCT-1998; 98DK-00001261.

20-OCT-1998; 98US-0105011P.

(NEBI-) M & E BIOTECH AS.

Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

Gautam A, Birk P, Karlsson G;

WPI: 2000-349917/30.

N-PSDB; AAA09455.

Inducing immune responses to weakly immunogenic, tumor associated peptide antigens for the treatment of breast and prostate cancer.

Claim 62; Page 193-198; 220pp; English.

This is the human heregulin 2 (Her2) sequence. Immunogenic analogues of Her2 can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody binding regions and cysteine residues involved in disulfide bonds are preserved in the immunogenized forms. Regions suitable for the insertion of foreign T helper epitopes were identified (see features table). The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively

QY	Sequence	1255 AA;
QY	1 QVCTGTDMLRLPASPETHDMLRHLQGCQVQGNLELTYLPTNASLSFLODIQVQGY 60	Query Match 100.0%; Score 6694; DB 3; Length 1255;
Db	24 QVCTGTDMLRLPASPETHDMLRHLQGCQVQGNLELTYLPTNASLSFLODIQVQGY 83	Best Local Similarity 100.0%; Pred. NO. 0;
QY	61 VLIAHNQVQVPLQRLRIVRGTLQFEDNYALVLDNGDPLNNTTPTVGTASPGGLRELQLR 120	Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Db	84 VLIAHNQVQVPLQRLRIVRGTLQFEDNYALVLDNGDPLNNTTPTVGTASPGGLRELQLR 143	
QY	121 SLEILKGGVLIQRPQLCYQDTILWKDIFHKNNQALTLIDNRSRACHPCSPMCKGSR 180	
Db	144 SLEILKGGVLIQRPQLCYQDTILWKDIFHKNNQALTLIDNRSRACHPCSPMCKGSR 203	
QY	181 CWGESSEDCOSLRTTVACGGCARCKGPLPTDCCHEQCACAGCTGPKHSDCLACLFHNSGI 240	
Db	204 CWGESSEDCOSLRTTVACGGCARCKGPLPTDCCHEQCACAGCTGPKHSDCLACLFHNSGI 263	
QY	241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLNHNEVT 300	
Db	264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLNHNEVT 323	
QY	301 AEDGTORCEKSKPCARVCYGLGMBHLREVRAVTSANIOEPAGCKKIFGSLAPLPESPDG 360	
Db	324 AEDGTORCEKSKPCARVCYGLGMBHLREVRAVTSANIOEPAGCKKIFGSLAPLPESPDG 383	
QY	361 DPASNTAPLOPQLOVFEETLEITGYLYISAMPDSIPLDSVFQNLQVIRGRILHNGAYSIL 420	
Db	384 DPASNTAPLOPQLOVFEETLEITGYLYISAMPDSIPLDSVFQNLQVIRGRILHNGAYSIL 443	
QY	421 TLQGLGISWLGLRSLRELGSGLALIHNNTHLCFVHTVPMDQLFRNPQHALLTANRPEDE 480	
Db	444 TLQGLGISWLGLRSLRELGSGLALIHNNTHLCFVHTVPMDQLFRNPQHALLTANRPEDE 503	
QY	481 CVGEGLAHOLCARGHCWGPGTQCVCNSQFIRGQECVEECVQLQGLPREYNARHCLPC 540	
Db	504 CVGEGLAHOLCARGHCWGPGTQCVCNSQFIRGQECVEECVQLQGLPREYNARHCLPC 563	
QY	541 HPECOPQNGSVTCFQPEADQCVACAHYKDPFPCVACRCSGVKPDLSYMPFWPDEEGAC 600	
Db	564 HPECOPQNGSVTCFQPEADQCVACAHYKDPFPCVACRCSGVKPDLSYMPFWPDEEGAC 623	
QY	601 QPCPINCTHSCVDLDDKGPABQORASPLTSIYSAVVGILLVVVLGVVFGILIKRQOKIR 660	
Db	624 QPCPINCTHSCVDLDDKGPABQORASPLTSIYSAVVGILLVVVLGVVFGILIKRQOKIR 683	
QY	661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDG 720	
Db	684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDG 743	
QY	721 ENVKIPVAIKVLRNTSPKANKEILDEAVMAGVSPYVSRILGICLTSTVOLVTOLMPY 780	
Db	744 ENVKIPVAIKVLRNTSPKANKEILDEAVMAGVSPYVSRILGICLTSTVOLVTOLMPY 803	
QY	781 GCLLDHVRNRLGSLQDILLNMCQIAKGMYSLEVDRLVHRDLAARNVLKSPNHVKITD 840	
Db	804 GCLLDHVRNRLGSLQDILLNMCQIAKGMYSLEVDRLVHRDLAARNVLKSPNHVKITD 863	
QY	841 FGLARLLIDITEYHADGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900	
Db	864 FGLARLLIDITEYHADGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923	
QY	901 DGIIPAREIPDLLEKGERLPQPPICITDVMIMVVKCWMIDSECRPRFRELVSFSSRMARDP 960	
Db	924 DGIIPAREIPDLLEKGERLPQPPICITDVMIMVVKCWMIDSECRPRFRELVSFSSRMARDP 983	
QY	961 QRFVVIQNEDLGFPASPLDSTFYRSLLEDDMGDLVDABEYLVPQGGFCFCDPAPGAGMV 1020	
Db	984 QRFVVIQNEDLGFPASPLDSTFYRSLLEDDMGDLVDABEYLVPQGGFCFCDPAPGAGMV 1043	

Qy 1021 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1080
Db 1044 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1103
Qy 1081 HDSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPQPPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLVY 1200
Db 1164 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLVY 1223
Qy 1201 DQPPPERGAPPSTFKGTPTAENPEYLGDLVVP 1232
Db 1224 DQPPPERGAPPSTFKGTPTAENPEYLGDLVVP 1255

RESULT 2
AAB60167
ID AAB60167 standard; protein; 1255 AA.
AC AAB60167;
XX
DT 03-APR-2001 (first entry)
XX
DE HER2 transgene plasmid construct encoded protein.
XX
KW Human; HER2; ErbB2 receptor; p185neu; maytansinoid conjugate; cancer;
KW antibody.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN W0200100244-A2.
XX
PD 04-JAN-2001.
XX
PF 23-JUN-2000; 2000WO-US017229.
XX
PR 25-JUN-1999; 99US-0141316P.
PR 16-MAR-2000; 2000US-0189844P.
XX
PA (GETH) GENENTECH INC.
XX
PI Erickeon S, Schwall R;
XX
DR WPI; 2001-061962/07.
DR N-PSDB; AAF24297.
XX
PT Treating tumors, particularly breast cancers, which overexpress an ErbB
PT receptor and does not respond to an anti-ErbB antibody, comprises
PT conjugating the antibody to a maytansinoid.
XX
PS Example 3; Fig 4; 92pp; English.
XX
CC The present invention provides a method of treating cancer by
CC administering a conjugate of anti-ErbB antibody with a maytansinoid. In
CC particular, the antibody is directed against ErbB2 (also known as HER2
CC and p185neu). The method is particularly useful in the treatment of
CC breast, ovarian, stomach, endometrial, salivary gland, lung, kidney,
CC colon, colorectal, thyroid, pancreatic, prostate and bladder cancers
XX
SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 4; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMLKRLPASPTHLDMLRHLXYQGCVVQGNLELTYLPTNASLSFLQDIOEVQGY 60
Db 24 QVCTGTDMLKRLPASPTHLDMLRHLXYQGCVVQGNLELTYLPTNASLSFLQDIOEVQGY 83

Qy 61 VLIAHNQVQVPLQRLRIVRGTLQFDNYVALAVLDNGDPLNNTTPVTGASPGGLRELQLR 120
Db 84 VLIAHNQVQVPLQRLRIVRGTLQFDNYVALAVLDNGDPLNNTTPVTGASPGGLRELQLR 143
Qy 121 SLTEILKGGVLIQORNQOLCYQDITLWKDIFHKNNQALALTLIDNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQORNQOLCYQDITLWKDIFHKNNQALALTLIDNRSRACHPCSPCKGSR 203
Qy 181 CWGESSEDCOSLRTTVCAGSCARCKGPLPTDCCEQCAAGCTGPKHSDCLACILHFNHSGI 240
Db 204 CWGESSEDCOSLRTTVCAGSCARCKGPLPTDCCEQCAAGCTGPKHSDCLACILHFNHSGI 263
Qy 241 CELHCPALVTYNTDITFESMPNPEGRYTFGASCVTACPYNYLSTDVSGSCTLVCLPHNQEV 300
Db 264 CELHCPALVTYNTDITFESMPNPEGRYTFGASCVTACPYNYLSTDVSGSCTLVCLPHNQEV 323
Qy 301 AEDGTORCEKCKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTORCEKCKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 383
Qy 361 DPASNTAPLOPEQLOVFETLEITGYLYISAWPDSLPLSVFQNLQVIRGRIILHNGAYSL 420
Db 384 DPASNTAPLOPEQLOVFETLEITGYLYISAWPDSLPLSVFQNLQVIRGRIILHNGAYSL 443
Qy 421 TLQGLGISWLGRLSLRELGSGLALIIHNHNLFCFVHTVPMDQLFRNPHQALLHTANREDE 480
Db 444 TLQGLGISWLGRLSLRELGSGLALIIHNHNLFCFVHTVPMDQLFRNPHQALLHTANREDE 503
Qy 481 CVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLOGLPREYVVARHCLPC 540
Db 504 CVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLOGLPREYVVARHCLPC 563
Qy 541 HPECQPNQSVTCFGEADQCVACAHKDPFPCVACPCGKPDLSVMP1WKPDDEBAC 600
Db 564 HPECQPNQSVTCFGEADQCVACAHKDPFPCVACPCGKPDLSVMP1WKPDDEBAC 623
Qy 601 QPCPINTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLVGVVFGILIKRQKQIR 660
Db 624 QPCPINTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLVGVVFGILIKRQKQIR 683
Qy 661 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLSGAGFVYVGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLSGAGFVYVGIWIPDG 743
Qy 721 ENVKIPVAIKVLRNTSPKANKELDEAYVMAGVSPYVSRLLGICLTSTVQLVTQJMPY 780
Db 744 ENVKIPVAIKVLRNTSPKANKELDEAYVMAGVSPYVSRLLGICLTSTVQLVTQJMPY 803
Qy 781 GCLLDHVRENRLGSLQDLNLCWQIAKGMYSYLEDVRLVHRDLAARNVLYKSPNHVKITD 840
Db 804 GCLLDHVRENRLGSLQDLNLCWQIAKGMYSYLEDVRLVHRDLAARNVLYKSPNHVKITD 863
Qy 841 FGLARLLDIDETEHADGGKVP1KWMALSIILRRRFTHQSDVWSYGVTVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVP1KWMALSIILRRRFTHQSDVWSYGVTVWELMTFGAKPY 923
Qy 901 DGPAREIPDLLEKGERLPPOPICTIDVYIMVYKMWIMIDSECRPRPRELVSERSMARDP 960
Db 924 DGPAREIPDLLEKGERLPPOPICTIDVYIMVYKMWIMIDSECRPRPRELVSERSMARDP 983
Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDMGLVDABEYLVFPQQGFPCPDPAFGAGMW 1020
Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDMGLVDABEYLVFPQQGFPCPDPAFGAGMW 1043
Qy 1021 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1080
Db 1044 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1103
Qy 1081 HDSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPQPPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLVY 1200

Db 1164 GATLERAKTSLPGKNGVWDVFAFGGAVENPEYLTPQGAAPQPHPPAFSPAFNLXYW 1223
 Qy 1201 DQDPPERGAPPSTFKGTPTAENPEYLGLOVPV 1232
 Db 1224 DQDPPERGAPPSTFKGTPTAENPEYLGLOVPV 1255

RESULT 3

AAE12130
 ID AAE12130 standard; protein; 1255 AA.

AC AAE12130;

XX 18-DEC-2001 (first entry)

XX Human tyrosine kinase-type receptor, HER-2.

XX Therapeutic compound; major histocompatibility complex; vaccine;
 KW antigenic peptide; MHC; immunoregulatory; immune response; HER-2;
 KW adoptive immunotherapy; anti-cancer; breast cancer antigen; APC;
 KW antigen presenting cell; human; tyrosine kinase-type receptor.

XX Homo sapiens.

XX Key Location/Qualifiers
 FH Region 774..782
 FT /note= "Antigenic epitope"
 FT
 XX

XX W0200168677-A2.

XX 20-SEP-2001.

XX 16-MAR-2001; 2001WO-US040328.

XX 16-MAR-2000; 2000US-00527487.

XX (GENZ) GENZYME CORP.

XX Nicolette CA;

XX WPI; 2001-616284/71.

XX N-PSDB; AAD19731.

XX Novel synthetic therapeutic compound for inducing immune response and for
 PT use in adoptive immunotherapy, has enhanced binding to major
 PT histocompatibility molecules and enhanced immunoregulatory properties.

XX Claim 4; Page 63-67; 69pp; English.

XX The invention relates to synthetic therapeutic compounds (antigenic
 CC peptides) with enhanced binding to major histocompatibility complex (MHC)
 CC molecules and enhanced immunoregulatory properties relative to their
 CC natural counterparts. Compounds of the invention are useful for inducing
 CC an immune response in a subject and for use in adoptive immunotherapy.
 CC They are useful as components of anti-cancer vaccines and to expand
 CC immune effector cells that are specific for cancers characterised by
 CC expression of the breast cancer antigen, HER-2. Polynucleotides that
 CC encode peptides of the invention are useful as hybridisation probes and
 CC as primers for the detection of genes of gene transcripts that are
 CC expressed in antigen presenting cells (APCs), to confirm transduction of
 CC polynucleotides into host cells. The present sequence is human tyrosine
 CC kinase-type receptor, HER-2. Compounds of the invention are designed
 CC based on the HER-2 antigenic peptide (774-782)

XX Sequence 1255 AA;

XX Query Match 100.0%; Score 6694; DB 4; Length 1255;

XX Best Local Similarity 100.0%; Pred. No. 0;

XX Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGDMKRLPASPTHLMRLHYQGCVVQGNLELTYLPTNASLSFLQDIEVQGY 60

Db 24 QVCTGDMKRLPASPTHLMRLHYQGCVVQGNLELTYLPTNASLSFLQDIEVQGY 83
 Qy 61 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLREIQLR 120
 Db 84 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLREIQLR 143
 Qy 121 SLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNQLALTLIDTNRSRACHPCSPMCKGSR 180
 Db 144 SLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNQLALTLIDTNRSRACHPCSPMCKGSR 203
 Qy 181 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 240
 Db 204 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 263
 Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSGCTLVCPHNGEVT 300
 Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSGCTLVCPHNGEVT 323
 Qy 301 AEDGTQCEKCKPCARVCYGLGMEHLREVRVTSANIQEPAGCKKIFGSLAFILPESPDG 360
 Db 324 AEDGTQCEKCKPCARVCYGLGMEHLREVRVTSANIQEPAGCKKIFGSLAFILPESPDG 383
 Qy 361 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFNQLQVIRGILHNGAYSL 420
 Db 384 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFNQLQVIRGILHNGAYSL 443
 Qy 421 TIQGLGISWLGRLSRLRELGSGIALIHNNTHLCFVHTVPWDOLFBNPHQALAHNRPDE 480
 Db 444 TIQGLGISWLGRLSRLRELGSGIALIHNNTHLCFVHTVPWDOLFBNPHQALAHNRPDE 503
 Qy 481 CVGEGLACHQLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLPC 540
 Db 504 CVGEGLACHQLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLPC 563
 Qy 541 HPECQPQNGSVTCFGEADQCVACAHYKDPFCFVARCPSGVKPDLSYMPIWKFPDEBAC 600
 Db 564 HPECQPQNGSVTCFGEADQCVACAHYKDPFCFVARCPSGVKPDLSYMPIWKFPDEBAC 623
 Qy 601 QPCPINCTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLGVWFGLIKRQOKIR 660
 Db 624 QPCPINCTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLGVWFGLIKRQOKIR 683
 Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELAKVKVLSGAFGTVYKGIWIPDG 720
 Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELAKVKVLSGAFGTVYKGIWIPDG 743
 Qy 721 ENVKIPVAIKVURENTSPKANKEILDEAYVWAGVSPYVSRLLGICLTSTVOLATLMPY 780
 Db 744 ENVKIPVAIKVURENTSPKANKEILDEAYVWAGVSPYVSRLLGICLTSTVOLATLMPY 803
 Qy 781 GCLLDHVRNRLGSGQDLLNWCQIAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 840
 Db 804 GCLLDHVRNRLGSGQDLLNWCQIAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 863
 Qy 841 FGLARLLDIDETEHADGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
 Db 864 FGLARLLDIDETEHADGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
 Qy 901 DGIPAREIPDLLEKGERLPOPPICITDVMYIMVKCWMIDSECRPRELVSFESRMARDP 960
 Db 924 DGIPAREIPDLLEKGERLPOPPICITDVMYIMVKCWMIDSECRPRELVSFESRMARDP 983
 Qy 961 QRFVWIQNEDLGPASPLDSTFYRSLLEDMDGDLVDABEYLVPOQGFCCPDPAAGGMV 1020
 Db 984 QRFVWIQNEDLGPASPLDSTFYRSLLEDMDGDLVDABEYLVPOQGFCCPDPAAGGMV 1043
 Qy 1021 HHRHRSSTRSGGDLITGLFEPSEEAAPRSLAPSEGAGSDVFDGDLGMAKGLQSLPT 1080
 Db 1044 HHRHRSSTRSGGDLITGLFEPSEEAAPRSLAPSEGAGSDVFDGDLGMAKGLQSLPT 1103
 Qy 1081 HDPSPLQRYSEPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPOPSPREGPLPAARPA 1140
 Db 1104 HDPSPLQRYSEPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPOPSPREGPLPAARPA 1163

Qy 1141 GATLERAKTILSPGKNGVVDVAFAGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLVYW 1200
Db 1164 GATLERAKTILSPGKNGVVDVAFAGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLVYW 1223
Qy 1201 DQDPPERGAPSTFKGTPTAENPEYLGIDVPV 1232
Db 1224 DQDPPERGAPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 4

AAE26349
ID AAE26349 standard; protein; 1255 AA.

XX AC AAE26349;

DT 13-DEC-2002 (first entry)

XX Human HER-2 protein.

XX Transgenic animal; transgenic; mammary gland cell; HER2; tumour; cancer;
KW therapy; apoptosis; cytostatic; human.

XX Homo sapiens.

XX US2002035736-A1.

XX 21-MAR-2002.

XX 16-MAR-2001; 2001US-00811115.

XX 16-MAR-2000; 2000US-0189844P.

XX (ERIC/) ERICKSON S.

XX (KING/) KING K.

XX (SCHW/) SCHWALL R.

XX Erickson S, King K, Schwall R;

XX WPI; 2002-403759/43.

XX N-PSDB; AAD43934, AAD43935.

PT New transgenic non-human mammal that produces detectable levels of a
PT native human HER2 protein in its mammary gland cells, useful as tumor
PT models for testing HER2-directed cancer therapies, and for identifying
PT anticancer agents.

XX Example 2; Page 26-29; 83pp; English.

XX The invention relates to a transgenic non-human mammal that produces in
CC its mammary gland cells detectable levels of a native human HER2 protein
CC or its fragment. The transgenic animals are useful as tumour models for
CC testing HER2-directed cancer therapies, and for identifying anticancer
CC agents. The animals may also be used as source of cells which can be
CC immortalised in culture, in screening for compounds that have potential
CC as prophylactic or therapeutic treatments of diseases or disorders
CC involving expression of HER2. The anti-cancer molecules are useful for
CC inducing apoptosis or cell death of cancer cells. The present sequence is
CC human HER-2 protein

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 5; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMLRLPASPEHLDMLRLHYQGQVQGNLELTYPNINASLSFLQDIQEVQY 60

Db 24 QVCTGTDMLRLPASPEHLDMLRLHYQGQVQGNLELTYPNINASLSFLQDIQEVQY 83

Qy 61 VLIAHNOVRQVPLQRLRIVRGTLFEDNYALAVLDNGDPLNNTTPTVTGASFGGLRELQLR 120

Db 84 VLIAHNOVRQVPLQRLRIVRGTLFEDNYALAVLDNGDPLNNTTPTVTGASFGGLRELQLR 143

Qy 121 SLTEILKGGVLIQORNPOLCYODTILWKDIFHKNNQALALTIDNRSRACHPCSPMCKGSR 180
Db 144 SLTEILKGGVLIQORNPOLCYODTILWKDIFHKNNQALALTIDNRSRACHPCSPMCKGSR 203
Qy 181 CWSESSEDCQSLTRTVCAAGCARKGPLPTDCHEQCAAGCTGPKISDCLACLHFNHSGI 240
Db 204 CWSESSEDCQSLTRTVCAAGCARKGPLPTDCHEQCAAGCTGPKISDCLACLHFNHSGI 263
Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLTSDVGSCTLVCPHNOEVT 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLTSDVGSCTLVCPHNOEVT 323
Qy 301 AEDGTQCEKCKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTQCEKCKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFDG 383
Qy 361 DPASNTAPLOPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSL 420
Db 384 DPASNTAPLOPEQLQVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSL 443
Qy 421 TLOGLGISWLGRLSRLSGSLALIHNTHLCFVHTVPMWDLRNPQHQAIIHTANREDE 480
Db 444 TLOGLGISWLGRLSRLSGSLALIHNTHLCFVHTVPMWDLRNPQHQAIIHTANREDE 503
Qy 481 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVEBCRVLQGLPREYVVARHCLPC 540
Db 504 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVEBCRVLQGLPREYVVARHCLPC 563
Qy 541 HPECQFQNGSVTCFQPEADQCVACAHYKOPPPCVARCPGKVPDLSYMPYIWKFPDEBAC 600
Db 564 HPECQFQNGSVTCFQPEADQCVACAHYKOPPPCVARCPGKVPDLSYMPYIWKFPDEBAC 623
Qy 601 QPCPINCTHSCVDLDDKGPABORASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGPABORASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 683
Qy 661 KYTMRRLLOBELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
Db 684 KYTMRRLLOBELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVIRENTSPKANKIELDEAYVMAGVGSPPVSRLLGICLTSTVQLVQLMPY 780
Db 744 ENVKIPVAIKVIRENTSPKANKIELDEAYVMAGVGSPPVSRLLGICLTSTVQLVQLMPY 803
Qy 781 GCILLDHVRENRLGSGDILLNWCQIAKGSYLEDLVRLVHRDLAARNVLKSPNHVKITD 840
Db 804 GCILLDHVRENRLGSGDILLNWCQIAKGSYLEDLVRLVHRDLAARNVLKSPNHVKITD 863
Qy 841 FGLARLLDIDETEHADGGKVPKMWALBSILRRRFTHQSDVMSYGVTVWELMTFFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVPKMWALBSILRRRFTHQSDVMSYGVTVWELMTFFGAKPY 923
Qy 901 DGIPAREIPDLLEKGERLPQPPICITDVMYIMVKMWIDSECRPRFRELVSERFARMARDP 960
Db 924 DGIPAREIPDLLEKGERLPQPPICITDVMYIMVKMWIDSECRPRFRELVSERFARMARDP 983
Qy 961 ORFWIYNEDLGPASPLDSTFYRSILDEDDMGDLVDAEYLVPOQGFCCPDPAAGAGMV 1020
Db 984 ORFWIYNEDLGPASPLDSTFYRSILDEDDMGDLVDAEYLVPOQGFCCPDPAAGAGMV 1043
Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSEGAGSDVDFDGLGMGAAGLQSLPT 1080
Db 1044 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSEGAGSDVDFDGLGMGAAGLQSLPT 1103
Qy 1081 HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPOPEYVNOQDVPRPQPPSPREGPLPAARPA 1140
Db 1104 HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPOPEYVNOQDVPRPQPPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTILSPGKNGVVDVAFAGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLVYW 1200
Db 1164 GATLERAKTILSPGKNGVVDVAFAGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLVYW 1223

QY	1201	DQDPPERGAAPPSTFKGTPTAENPEYLGLDVPV	1232	Db	24	QVCTGTDMLRLPASPEHLDMLRLHLYQGCVQVQGNLELTYLPTNASLSFLQDIOEVQGY	83
Db	1224	DQDPPERGAAPPSTFKGTPTAENPEYLGLDVPV	1255	QY	61	VLIAHNQVRQVPLQRLRIVRGTQOLFEDNYALAVLDNGDPLNNTTPTVTGASPGGIRELOLR	120
RESULT 5				Db	84	VLIAHNQVRQVPLQRLRIVRGTQOLFEDNYALAVLDNGDPLNNTTPTVTGASPGGIRELOLR	143
AAE26366				QY	121	SLTEILKGGVLIQRPOLCYQDTILWKDIIFKHNQALATLIDTNRSRACHPCSPMCKGSR	180
AAE26366				Db	144	SLTEILKGGVLIQRPOLCYQDTILWKDIIFKHNQALATLIDTNRSRACHPCSPMCKGSR	203
13-DEC-2002				QY	181	CWGESSEDCOSLRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI	240
Human Her2 antigen.				Db	204	CWGESSEDCOSLRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI	263
Human, immune response; T-helper cell epitope; chitosan; CTL response; vaccine; prostate cancer; breast cancer; Her2 antigen; cytostatic; immunostimulant.				QY	241	CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVSGSCTLVCPHNOEVT	300
Homo sapiens.				Db	264	CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVSGSCTLVCPHNOEVT	323
Key				QY	301	AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFDG	360
Peptide				Db	324	AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLPESFDG	383
Protein				QY	361	DPASNTAPLOPEQLQVFETLEETITGYLYISAMPDLSLDPVSFQNLQVIRGILHNGAYSL	420
Location/Qualifiers				Db	384	DPASNTAPLOPEQLQVFETLEETITGYLYISAMPDLSLDPVSFQNLQVIRGILHNGAYSL	443
1. .23				QY	421	TLQGGISWLGLRSIRLGLSGALIIHNTHLCFVHTVPWDQLPNPHQALLHTANRPEDE	480
/label= Signal_peptide				Db	444	TLQGGISWLGLRSIRLGLSGALIIHNTHLCFVHTVPWDQLPNPHQALLHTANRPEDE	503
24..1255				QY	481	CVGEGLAACHOLCARGHCWPGPTQCVNCSQFLRQCECVCECRVLQGLPREYVNAHCLIPC	540
/note= "Mature human Her2 antigen"				Db	504	CVGEGLAACHOLCARGHCWPGPTQCVNCSQFLRQCECVCECRVLQGLPREYVNAHCLIPC	563
WO200234287-A2.				QY	541	HPECOPQNGSVTCFGEADQCVACAHYKDPFCVARGCPGVKPDLSYMPIWKFDEEGAC	600
02-MAY-2002.				Db	564	HPECOPQNGSVTCFGEADQCVACAHYKDPFCVARGCPGVKPDLSYMPIWKFDEEGAC	623
26-OCT-2001; 2001WO-DK000705.				QY	601	QPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVLGVVFGILLIKRQOKIR	660
27-OCT-2000; 2000DK-00001606.				Db	624	QPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVLGVVFGILLIKRQOKIR	683
03-NOV-2000; 2000US-0245166P.				QY	661	KYTMRLLOETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAGFTYKGIWIPDG	720
18-JUN-2001; 2001DK-00000936.				Db	684	KYTMRLLOETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAGFTYKGIWIPDG	743
(PHAR-) PHARMEXA AS.				QY	721	ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPVSRLLGICLTSTVQLVTQLMPY	780
Beier AM, Gautam A, Mouritsen S;				Db	744	ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPVSRLLGICLTSTVQLVTQLMPY	803
WPI; 2002-463339/49.				QY	781	GCLLDHVRNRLGSLQDLNWCMIKGMSTYLEDVRLVHRDLAARNVLKSPNHVKITD	840
N-PSDB; AAD43986.				Db	804	GCLLDHVRNRLGSLQDLNWCMIKGMSTYLEDVRLVHRDLAARNVLKSPNHVKITD	863
Inducing or enhancing an immune response against an antigen, particularly cytotoxic T-lymphocyte responses, for treating or ameliorating prostate or breast cancer, comprises administering the antigen formulated with chitosan.				QY	841	FGILRLDIDETEHADGKVPDKWMALESILRRFTHQSDVMSYGVTVWELMTFGAKPY	900
Disclosure; Page 91-95; 97pp; English.				Db	864	FGILRLDIDETEHADGKVPDKWMALESILRRFTHQSDVMSYGVTVWELMTFGAKPY	923
The invention relates to a method for inducing or enhancing an immune response against a polypeptide antigen in an animal, including human. The method comprises administering the polypeptide antigen or at least one variant which includes at least one first T-helper cell epitope that is foreign to the animal (foreign TH epitope) and is formulated with chitosan. The polypeptide antigen is weakly immunogenic or non-immunogenic. The invention is used as vaccine. The chitosan and polypeptide antigen or its variant are useful in the preparation of an immunogenic composition for inducing or enhancing an immune response, particularly CTL response, against the polypeptide or protein antigen. The method for inducing or enhancing an immune response is useful in treating or ameliorating cancer, e.g. prostate or breast cancer. The present sequence is human Her2 antigen				QY	901	DGIPAREIPDLLEKGERLPOPPICITDVYIMVKCMIDSECRPRELVSSEFSEMRDPP	960
				Db	924	DGIPAREIPDLLEKGERLPOPPICITDVYIMVKCMIDSECRPRELVSSEFSEMRDPP	983
				QY	961	QRFVVIQNEDLGFPASPLDSTFYRSLLDDMDGDLVDAEYLVPOQGFPCPDAPGAGNV	1020
				Db	984	QRFVVIQNEDLGFPASPLDSTFYRSLLDDMDGDLVDAEYLVPOQGFPCPDAPGAGNV	1043
				QY	1021	HHHRSSSTRSGGDLTLGLEPSEEAEPSPAPSEAGSDVDFDGLGMAAKGQSLPT	1080
				Db	1044	HHHRSSSTRSGGDLTLGLEPSEEAEPSPAPSEAGSDVDFDGLGMAAKGQSLPT	1103
				QY	1081	HDPSPIQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA	1140
				Db	1104	HDPSPIQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA	1163

Query Match 100.0%; Score 6694; DB 5; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QVCTGTDMLRLPASPEHLDMLRLHLYQGCVQVQGNLELTYLPTNASLSFLQDIOEVQGY 60

Db 1044 HHRSSSTRSGGDLTLGLEPSEBEAPRSLAPSEAGSDVFDGLGMAAKGLQSLPT 1103
QY 1081 HDSPLQRYSEDDTVLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDDTVLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQPHPPAFSADFNLVYW 1200
Db 1164 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQPHPPAFSADFNLVYW 1223
QY 1201 DQPPPERGAPPSFTKGTPTAENPEYLGLDVVP 1232
Db 1224 DQPPPERGAPPSFTKGTPTAENPEYLGLDVVP 1255

RESULT 7
ID ABR47447
ID ABR47447 standard; protein; 1255 AA.
XX ABR47447;
XX 12-JUN-2003 (first entry)
XX Breast cancer associated protein sequence SEQ ID NO:126.
XX Human; breast cancer; cytostatic; gene therapy.
XX Homo sapiens.
XX W02003004989-A2.
XX 16-JAN-2003.
XX 21-JUN-2002; 2002WO-US019669.
XX 21-JUN-2001; 2001US-0299887P.
XX 21-JUN-2001; 2001US-0301572P.
XX 18-JUL-2001; 2001US-0306501P.
XX 25-SEP-2001; 2001US-0325002P.
XX 05-MAR-2002; 2002US-0362585P.
XX 14-MAY-2002; 2002US-0380391P.
XX (MILL-) MILLENIUM PHARM INC.

XX Lillie J, Gannavarapu M, Glatt K, Hoersh S, Kamatkar S;
XX Mertens M, Monahan JE, Myer V, Wang Y, Xu Y, Zhao X, Meyers RE;
XX Bast RC, Hortobagyi GN, Pusztai L, Meric F, Sahin A, Mills GB;
XX WPI; 2003-210381/20.
XX N-PSDB; ACC50139.
XX Breast cancer diagnosis or treatment by comparing the level of expression
XX of a marker in a patient sample with that in the control non-breast
XX cancer sample.
XX Claim 1; SEQ ID NO 126; 128pp; English.

XX The present invention describes a method for assessing whether a patient
XX is afflicted with breast cancer. The method comprises comparing the level
XX of expression of a marker (gene/polypeptide see ACC50076 to ACC50334 and
XX ABR47386 to ABR47632) in a patient sample and the normal level of
XX expression of the marker in a control non-breast cancer sample, where a
XX significant increase in the level of expression of the marker in the
XX patient sample and the normal level is an indication that the patient is
XX afflicted with breast cancer. The breast cancer associated sequences from
XX the present invention have cytostatic activities and can be used in gene
XX therapy. The method is useful for diagnosing and treating breast cancer.
XX N.B. The sequence data for this patent did not form part of the printed
XX specification, but was obtained in electronic format directly from WIPO
XX at ftp.wipo.int/pub/published_pct_sequences
XX Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 6; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QVCTGDMKRLPASPETHLDMLRHLYQGCGVQVQGNLELYLPTNASTLSFLQDIOEVQGY 60
Db 24 QVCTGDMKRLPASPETHLDMLRHLYQGCGVQVQGNLELYLPTNASTLSFLQDIOEVQGY 83
QY 61 VLIAHNQVRQVPLQRLRIVRGTOQLFEDNYALAVLDNGDPLNNTTPTVTCASPGGLREQLR 120
Db 84 VLIAHNQVRQVPLQRLRIVRGTOQLFEDNYALAVLDNGDPLNNTTPTVTCASPGGLREQLR 143
QY 121 SLTEILKGGVLIQRNPQLCYODTILWKDIFHKNQALATLIDTNRSRACHPCSPMKGSR 180
Db 144 SLTEILKGGVLIQRNPQLCYODTILWKDIFHKNQALATLIDTNRSRACHPCSPMKGSR 203
QY 181 CWGESSEDCQSLTRTVCAAGCARGCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGCARGCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
QY 241 CELHCPALVTNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQSVT 300
Db 264 CELHCPALVTNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQSVT 323
QY 301 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIQEPAGCKKIFGSLAFIPESPDG 360
Db 324 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIQEPAGCKKIFGSLAFIPESPDG 383
QY 361 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPDLSPFQNLQVIRGIRILHNGAYSL 420
Db 384 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPDLSPFQNLQVIRGIRILHNGAYSL 443
QY 421 TLQGLGISWGLRSRLRELGSLALIHNNTHLCFVHTVPWDOLFNRPHQALLHTANRPEDE 480
Db 444 TLQGLGISWGLRSRLRELGSLALIHNNTHLCFVHTVPWDOLFNRPHQALLHTANRPEDE 503
QY 481 CVGEGGLACHOLCARGHGWPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGGLACHOLCARGHGWPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLPC 563
QY 541 HPECOPQNGSVTCFGPEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPIWKFPDEGAC 600
Db 564 HPECOPQNGSVTCFGPEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPIWKFPDEGAC 623
QY 601 QPCPNCTHSCVDLDDKGCAPRORASPLTSIVSAVVGILLVVLGVFGILLIKRQOKIR 660
Db 624 QPCPNCTHSCVDLDDKGCAPRORASPLTSIVSAVVGILLVVLGVFGILLIKRQOKIR 683
QY 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGTVYKGIWIPDG 743
QY 721 ENVKIPVAIKVIRENTSPKANKEIIDDEAYVMAGVCSPPVSRLLGLCLSTVOLVTQLMPY 780
Db 744 ENVKIPVAIKVIRENTSPKANKEIIDDEAYVMAGVCSPPVSRLLGLCLSTVOLVTQLMPY 803
QY 781 GCLLDHVRNCRGLSQDILLNWCMIAGMSYLEDLVLRVHRDLAARNVLKSPNHVKITD 840
Db 804 GCLLDHVRNCRGLSQDILLNWCMIAGMSYLEDLVLRVHRDLAARNVLKSPNHVKITD 863
QY 841 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
QY 901 DGIPIAREIPDLLEKGERLPOPICTIDVYIMVCKWMDISECRPRELVSFSESRWARDP 960
Db 924 DGIPIAREIPDLLEKGERLPOPICTIDVYIMVCKWMDISECRPRELVSFSESRWARDP 983
QY 961 QRPVWIONEDLGPASPLDSTFYRSLLDDEDDMGDLVDAEYLVPOQGFCCFDPAPGAGNMV 1020
Db 984 QRPVWIONEDLGPASPLDSTFYRSLLDDEDDMGDLVDAEYLVPOQGFCCFDPAPGAGNMV 1043
QY 1021 HHRHRSSTRSGGDLTLGLEPSEBEAPRSLAPSEAGSDVFDGLGMAAKGLQSLPT 1080

Db 1044 HHRSSSTRSGGDLTLGLSPSEEEAPRSLAPSEAGSDVFDGLMGAAKGLQSLPT 1103
Qy 1081 HDPSPLOQYSDPTVPLPSETDGVVAPLTCSPQPEYVNPQDVRPQPSREGPLPAARPA 1140
Db 1104 HDPSPLOQYSDPTVPLPSETDGVVAPLTCSPQPEYVNPQDVRPQPSREGPLPAARPA 1163
Qy 1141 GATLERAKTSLSPGKNGVVKDYFAFGGAVENPEYLTPOGGAAPHPHPAFSPAFDNLYYW 1200
Db 1164 GATLERAKTSLSPGKNGVVKDYFAFGGAVENPEYLTPOGGAAPHPHPAFSPAFDNLYYW 1223
Qy 1201 DODPPERGAPSTFKGTPTAENPEYLGIDVVP 1232
Db 1224 DODPPERGAPSTFKGTPTAENPEYLGIDVVP 1255

RESULT 8
ABP74708
ID ABP74708 standard; protein; 1255 AA.
XX
AC
AC
XX
DT 03-FEB-2003 (first entry)
XX
DE Human Her2/Neu protein SEQ ID NO:594.
XX
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell; chromosome 17q21-q22.
XX
OS Homo sapiens.
XX
FN WO200281646-A2.
XX
PD 17-OCT-2002.
XX
PF 04-APR-2002; 2002WO-US011101.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX

Simard JDL, Diamond DC, Liu L, Xie Z;
WPI; 2003-067518/06.
N-PSDB; ABQ83856.

Novel epitopes useful as vaccines, comprises peptides or nucleic acid encoding the peptides, that are useful epitopes of target-associated antigens.

Claim 1; Page 175; 352pp; English.

The present invention describes an isolated epitope (I) and an epitope cluster. Also described is a vaccine or immunotherapeutic composition (VC) comprising (I). (I) has cytostatic activity. VC is useful for treating an animal, by administering to an animal the vaccine or immunotherapeutic composition. VC is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic composition, by administering VC to an HLA-transgenic animal and evaluating immunogenicity based on a characteristic of the animal, or by in vitro primary stimulation of a T cell and evaluating immunogenicity. (I) is useful for determining specific T cell frequency, by contacting T cells with a MHC-peptide complex, and further comprises ELISPOT analysis, limiting dilution analysis, flow cytometry, in situ hybridisation and/or polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to ABP74713 represent sequences used in the exemplification of the present invention

Sequence 1255 AA;

Query Match

100.0%; Score 6694; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMLRLPASBETHLDMLRLHYQGCVQGNLELYLPTNASLSFLQDIOEQVQY 60
Db 24 QVCTGTDMLRLPASBETHLDMLRLHYQGCVQGNLELYLPTNASLSFLQDIOEQVQY 83
Qy 61 VLIAHNQVRQVPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLREQLR 120
Db 84 VLIAHNQVRQVPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLREQLR 143
Qy 121 SLTEILKGGVLIQRNPOLCYQDTILMKDIFHKNNQLALTLIDNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQRNPOLCYQDTILMKDIFHKNNQLALTLIDNRSRACHPCSPCKGSR 203
Qy 181 CWGESSEDCOSLTRTYCAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCOSLTRTYCAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
Qy 241 CELHCPALVTYNTDTFESMENPEGRVTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 300
Db 264 CELHCPALVTYNTDTFESMENPEGRVTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 323
Qy 301 AEDGTQCEKCKPCARVCYGLQMEHLREVRVTSANIOEFAGCKIFGSLAPLPEFSDG 360
Db 324 AEDGTQCEKCKPCARVCYGLQMEHLREVRVTSANIOEFAGCKIFGSLAPLPEFSDG 383
Qy 361 DPASNTAPLOPEQLQVFETLEETGVLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYS 420
Db 384 DPASNTAPLOPEQLQVFETLEETGVLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYS 443
Qy 421 TLOGLGISWGLRSRLRELGSGLALIHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 480
Db 444 TLOGLGISWGLRSRLRELGSGLALIHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 503
Qy 481 CVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVNAHCLPC 563
Qy 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSVMPYKWPDEGAC 600
Db 564 HPECQPNQSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSVMPYKWPDEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGCFAEORASPLTSIVSAVVGILLVVLGVVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGCFAEORASPLTSIVSAVVGILLVVLGVVFGILIKRQOKIR 683
Qy 661 KYTMRLLQSTELVEPLTPSGAMPNQAQMRILKETELRKVKVILGSGAFGVYKGIWIPDG 720
Db 684 KYTMRLLQSTELVEPLTPSGAMPNQAQMRILKETELRKVKVILGSGAFGVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVLRENTSPKANKSILDEAYVMAGVGSFYVSRLLIGLICLTSTVQLTQMPY 780
Db 744 ENVKIPVAIKVLRENTSPKANKSILDEAYVMAGVGSFYVSRLLIGLICLTSTVQLTQMPY 803
Qy 781 GCLLDHVRENRGLSGQDLLNWCQAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 840
Db 804 GCLLDHVRENRGLSGQDLLNWCQAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 863
Qy 841 FGLARLLDIDETEYHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEYHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 923
Qy 901 DGIIPAREIPDLLEKGRRLPQPPCTTDVVMYKWKWIDSECPREPRFELVSESRMARDP 960
Db 924 DGIIPAREIPDLLEKGRRLPQPPCTTDVVMYKWKWIDSECPREPRFELVSESRMARDP 983
Qy 961 QRFVVIQNEDLGPASPLDSTFYRSLLDDDDMGDLVDAEYLVQOQGFCCPDPAAGAGMV 1020
Db 984 QRFVVIQNEDLGPASPLDSTFYRSLLDDDDMGDLVDAEYLVQOQGFCCPDPAAGAGMV 1043
Qy 1021 HHRHRSSTRSGGDLTLGLPESEEEAPRSLAPSEAGSDVFDGLMGAAKGLQSLPT 1080

1044	DB	1044	HHRRSSSTRSGGDLTLGLEPSEEDAPRSPLAPSEGAGSVDFGDLGMGAAGLQSLPT	11010		
1081	QY	1081	HDPSFLQRYSEDTVPLPGETDGYVAPLTCSPQPEYVNPQDVVRPQPSPREGPLPAARPA	11140		
1104	DB	1104	HDPSFLQRYSEDTVPLPGETDGYVAPLTCSPQPEYVNPQDVVRPQPSPREGPLPAARPA	11163		
1141	QY	1141	GATLERAKTILSPGKNGVVKDVFAFGAVENPEYLTPQGGAAAPQHPHPPAFSPAFDNLYYW	1200		
1164	DB	1164	GATLERAKTILSPGKNGVVKDVFAFGAVENPEYLTPQGGAAAPQHPHPPAFSPAFDNLYYW	1223		
1201	QY	1201	DQDPPRGAPSTFKGTPTAENPEYLGLDVPV	1232		
1224	DB	1224	DQDPPRGAPSTFKGTPTAENPEYLGLDVPV	1255		
RESULT 9						
ID	AAE38390	standard; protein; 1255 AA.				
XX	AAE38390					
XX	AAE38390					
20-NOV-2003	(first entry)					
Human c-erbB2 protein.						
XX	ErB2; HER2; neu; breast cancer; protein therapy; human.					
XX	Homo sapiens.					
OS	Key	Location/Qualifiers				
FT	Domain	1..653				
FT		/note= "Extracellular domain"				
XX	WO2003061559-A2.					
XX	31-JUL-2003.					
XX	15-OCT-2002; 2002WO-US032947.					
XX	12-OCT-2001; 2001US-0329183P.					
XX	(UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE.					
XX	Krag DN, Pero SC, Oligino L;					
XX	WPI; 2003-671426/63.					
XX	N-PSDB; AAD58073.	<p>A composition for diagnosing, preventing or treating disorders characterized by ErbB2 overexpression (e.g. breast cancer) comprises an ErbB2 binding peptide that binds specifically to the extracellular domain of ErbB2.</p> <p>Disclosure; Page 95-100; 106pp; English.</p> <p>The present invention relates to peptides and peptidomimetics that bind to the extracellular domain of ErbB2 (also known as HER2 or neu). Sequences of the invention are useful in the diagnosis, prevention and treatment of disorders characterised by ErbB2 overexpression (e.g. breast cancer). The invention is also useful in protein therapy. The present sequence is human c-erbB2 protein</p>				
XX	Sequence 1255 AA;					
XX	Query Match				100.0%; Score 6694; DB 6; Length 1255;	
XX	Best Local Similarity				100.0%; Pred. No. 0;	
XX	Matches 1232; Conservative				0; Mismatches 0; Indels 0; Gaps 0;	
QY	1				QVCTGTDMLKRLPASPETHDMLRHLRYGCGVQVQGNLELTYLPTNASLSFLQDIQEVQGY	60
DB	24				QVCTGTDMLKRLPASPETHDMLRHLRYGCGVQVQGNLELTYLPTNASLSFLQDIQEVQGY	83
QY	61				VLIAHNOVROVFLORLRIVRGTOLEFEDNYALVLDNGDFLNNTPPTVTGASPGGLREQLQR	120

Db	84	VLI	AH	QV	R	V	P	L	Q	R	I	V	R	G	T	F	E	D	N	Y	A	L	N	G	P	L	N	T	T	P	V	T	G	A	S	P	G	L	R	E	L	Q	R	143															
Qy	121	S	T	E	I	L	K	G	V	L	I	O	R	N	P	O	L	C	Y	O	T	I	L	W	K	O	I	F	H	K	N	O	L	A	T	L	I	D	N	R	S	R	A	C	H	P	C	S	P	M	C	K	S	R	180				
Db	144	S	T	E	I	L	K	G	V	L	I	O	R	N	P	O	L	C	Y	O	T	I	L	W	K	O	I	F	H	K	N	O	L	A	T	L	I	D	N	R	S	R	A	C	H	P	C	S	P	M	C	K	S	R	203				
Qy	181	C	W	G	E	S	E	D	C	O	S	I	T	R	T	V	C	A	G	C	A	R	C	K	G	P	L	P	T	D	C	C	H	E	Q	C	A	G	T	G	P	K	H	S	D	C	L	A	C	L	H	N	H	S	G	I	240		
Db	204	C	W	G	E	S	E	D	C	O	S	I	T	R	T	V	C	A	G	C	A	R	C	K	G	P	L	P	T	D	C	C	H	E	Q	C	A	G	T	G	P	K	H	S	D	C	L	A	C	L	H	N	H	S	G	I	263		
Qy	241	C	E	L	H	C	P	A	L	V	T	N	T	D	I	F	E	S	M	P	N	E	G	R	T	F	G	A	S	C	V	T	A	C	P	N	Y	L	S	T	D	V	G	S	C	T	L	V	C	P	L	N	H	O	V	T	300		
Db	264	C	E	L	H	C	P	A	L	V	T	N	T	D	I	F	E	S	M	P	N	E	G	R	T	F	G	A	S	C	V	T	A	C	P	N	Y	L	S	T	D	V	G	S	C	T	L	V	C	P	L	N	H	O	V	T	323		
Qy	301	A	E	D	G	T	O	R	C	B	K	S	K	P	C	A	R	V	C	I	G	L	G	M	E	H	L	R	E	V	R	A	V	T	S	A	N	T	O	E	F	A	G	C	K	I	F	G	S	L	A	F	L	E	S	P	D	G	360
Db	324	A	E	D	G	T	O	R	C	B	K	S	K	P	C	A	R	V	C	I	G	L	G	M	E	H	L	R	E	V	R	A	V	T	S	A	N	T	O	E	F	A	G	C	K	I	F	G	S	L	A	F	L	E	S	P	D	G	383
Qy	361	D	P	A	S	N	T	A	P	L	O	P	E	O	L	O	V	F	E	I	T	G	V	L	I	S	A	N	P	D	S	L	P	D	S	V	F	Q	N	L	O	V	I	R	G	L	I	H	N	G	A	S	L	420					
Db	384	D	P	A	S	N	T	A	P	L	O	P	E	O	L	O	V	F	E	I	T	G	V	L	I	S	A	N	P	D	S	L	P	D	S	V	F	Q	N	L	O	V	I	R	G	L	I	H	N	G	A	S	L	443					
Qy	421	T	L	O	G	L	I	S	M	L	G	L	S	R	E	L	G	S	G	L	A	I	I	H	N	T	L	C	F	V	H	T	V	P	M	D	O	L	F	R	N	P	H	O	A	L	L	T	A	N	R	P	E	480					
Db	444	T	L	O	G	L	I	S	M	L	G	L	S	R	E	L	G	S	G	L	A	I	I	H	N	T	L	C	F	V	H	T	V	P	M	D	O	L	F	R	N	P	H	O	A	L	L	T	A	N	R	P	E	503					
Qy	481	C	V	E	G	E	L	A	C	H	O	L	C	A	R	G	H	C	W	G	P	T	O	C	N	C	S	O	F	L	R	G	E	C	V	E	E	C	R	V	L	O	G	L	P	R	E	Y	N	A	R	H	C	L</					

Db 1164 GATLERAKTSLPGKNGVVKDVFAGGAVENPEYLTPOQGAAPQHPPPAFSPAFDNLYYW 1223

Qy 1201 DQDPPERGAPSTFKGTPAENPEYLGLDVVP 1232

Db 1224 DQDPPERGAPSTFKGTPAENPEYLGLDVVP 1255

RESULT 10

ID ADA38143

XX ADA38143 standard; protein; 1255 AA.

AC ADA38143;

XX 20-NOV-2003 (first entry)

XX Human erb-B protein, a target of a therapeutic nanostructure.

XX implantable microscopic device; nanostructure; ligand; gout; bone injury;

XX cancer; HIV; p1; p2; human; erb-B.

XX Homo sapiens.

XX WO2003053357-A2.

XX 03-JUL-2003.

XX 18-DEC-2002; 2002WO-US040678.

XX 19-DEC-2001; 2001US-0342894P.

XX (WILK-) WILK PATENT DEV CORP.

XX Stirlb RC, Snead ML, Xu J, Vicetta ES, Wilk PJ;

XX WPI; 2003-569175/53.

XX Diagnostic or therapeutic method involves inserting medical devices

PT including nanostructures provided with ligand into patient, and attaching

PT nanostructures through ligand to predetermined target structure inside

PT patient.

XX Example 4; Page 14-15; 36pp; English.

XX This invention relates to a novel medical method comprising providing an

XX implantable microscopic device including a nanostructure provided with a

XX ligand for effectively coupling the nanostructure to a predetermined

XX chemical or molecular site. Specifically, the microscopic device is

XX directly implanted into patients at predetermined sites, and on reaching

XX the target site the nanostructure is activated to perform a preselected

XX medical diagnostic or therapeutic function. Accordingly, the present

XX invention describes using this method for the treatment of various

XX illnesses including gout whereby the target is a urea deposit that can be

XX disrupted by activation of the nanostructure, as well as bone injuries

XX and cancer. Furthermore, the target can consist of a microorganism

XX containing a strand of viral DNA, such that heating the nanostructure can

XX destroy the microorganism, which in turn can be used therapeutically to

XX treat HIV patients. This polypeptide sequence is the human erb-B protein

XX that is over expressed in human breast tumour cells and therefore acts as

XX target for a nanostructure of the invention.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMLKRLPASPEHLDMLRLHYQGQVVGQNLLEYLTPNALSLSFLQDIQEVQY 60

Db 24 QVCTGTDMLKRLPASPEHLDMLRLHYQGQVVGQNLLEYLTPNALSLSFLQDIQEVQY 83

Qy 61 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 120

Db 84 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLR 143

Qy 121 SLTEILKGGVLIORNPOLCYQDITLWKDIFHKNNQALATLIDNRSRACHPCSPMCKGSR 180

Db 144 SLTEILKGGVLIORNPOLCYQDITLWKDIFHKNNQALATLIDNRSRACHPCSPMCKGSR 203

Qy 181 CWGESSEDCQSLTRTVCAAGCARGKPLPTDCCHEQCAAGCTGPKHSDCLACLFHNSGI 240

Db 204 CWGESSEDCQSLTRTVCAAGCARGKPLPTDCCHEQCAAGCTGPKHSDCLACLFHNSGI 263

Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTVLCPLHNOEVT 300

Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTVLCPLHNOEVT 323

Qy 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGLSLAFIPESFDG 360

Db 324 AEDGTORCEKSKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGLSLAFIPESFDG 383

Qy 361 DPASNTAPLOPEQLOVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRIILHNGAYSL 420

Db 384 DPASNTAPLOPEQLOVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRIILHNGAYSL 443

Qy 421 TLQGLGISWGLSLRLSGSLALIIHNTHLCFVHTVPMQDLFRNPHQALLHTANRPEDE 480

Db 444 TLQGLGISWGLSLRLSGSLALIIHNTHLCFVHTVPMQDLFRNPHQALLHTANRPEDE 503

Qy 481 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVBEICRVLQGLPREYVVARHCLPC 540

Db 504 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVBEICRVLQGLPREYVVARHCLPC 563

Qy 541 HPECQPNQSVTCFGEADQCVACAHYKOPFFCVARCPGKPDLSVMPKWPDEEGAC 600

Db 564 HPECQPNQSVTCFGEADQCVACAHYKOPFFCVARCPGKPDLSVMPKWPDEEGAC 623

Qy 601 QPCPINCTHSCVDLDDKGPABORASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 660

Db 624 QPCPINCTHSCVDLDDKGPABORASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 683

Qy 661 KYTMRLLQETELVEPLTSGAMPNOAQRILKTELKVKVLGSGAGFVYKGIWIPDG 720

Db 684 KYTMRLLQETELVEPLTSGAMPNOAQRILKTELKVKVLGSGAGFVYKGIWIPDG 743

Qy 721 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPYVSRLLGICLITSTVQLVTQLMPY 780

Db 744 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPYVSRLLGICLITSTVQLVTQLMPY 803

Qy 781 GCLLDHVRENRGLGSDLLNWCQIAKMSYLEDVRLVHRDLAARNVLKSNHVKITD 840

Db 804 GCLLDHVRENRGLGSDLLNWCQIAKMSYLEDVRLVHRDLAARNVLKSNHVKITD 863

Qy 841 FGLARLLDIDETEHADGKVPKWMALSIILRRRFTHSDVMSYGVYVWELMTFGAKPY 900

Db 864 FGLARLLDIDETEHADGKVPKWMALSIILRRRFTHSDVMSYGVYVWELMTFGAKPY 923

Qy 901 DGIIPAREIPDLLEKGERLQPPICITDVMYMWKMWIDSECRPRFRELVSERWARDP 960

Db 924 DGIIPAREIPDLLEKGERLQPPICITDVMYMWKMWIDSECRPRFRELVSERWARDP 983

Qy 961 QRFVVIQNEBGLPASPLDSTFYRSLLDEDDMGDLVDABEYLVPOQGFCCPDPAAGGMV 1020

Db 984 QRFVVIQNEBGLPASPLDSTFYRSLLDEDDMGDLVDABEYLVPOQGFCCPDPAAGGMV 1043

Qy 1021 HHRHRSSTSGGGDLTLGLEPSEEAAPSLAPSEGAGSDVFDGLGWAAGKGLSLPT 1080

Db 1044 HHRHRSSTSGGGDLTLGLEPSEEAAPSLAPSEGAGSDVFDGLGWAAGKGLSLPT 1103

Qy 1081 HPSPLQRYSEOPTVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1140

Db 1104 HPSPLQRYSEOPTVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1163

Qy 1141 GATLERAKTSLPGKNGVVKDVFAGGAVENPEYLTPOQGAAPQHPPPAFSPAFDNLYYW 1200

Db 1164 GATLERAKTSLPGKNGVVKDVFAGGAVENPEYLTPOQGAAPQHPPPAFSPAFDNLYYW 1223

QY 1201 DQPPPERGAPPSTFKGPTAENPEYLGLDVVP 1232
Db 1224 DQPPPERGAPPSTFKGPTAENPEYLGLDVVP 1255

RESULT 11

ADA37255
ID ADA37255 standard; protein; 1255 AA.

XX ADA37255;

DT 20-NOV-2003 (first entry)

DE Human ErbB2 amino acid sequence SEQ ID NO:5.

XX crystal; epithelial growth factor; EGF;
KW epithelial growth factor receptor; EGFR; cytostatic; hepatotropic;
KW antitumor; antidiabetic; dermatological; antiparkinsonian; fungicide;
KW cancer; cancer proliferation; liver function disorder; ulcer;
KW Parkinson's disease; bone resorption disorder; ringworm; human;
KW protein co-ordinate data; ErbB2.

XX Homo sapiens.

XX W02003066677-A1.

XX 14-AUG-2003.

XX 12-SEP-2002; 2002WO-JP009332.

XX 05-FEB-2002; 2002JP-00028780.

XX (NISC-) JAPAN SCI & TECHNOLOGY CORP.
PA (RIKE) RIKEN KK.
PA (MOCH) MOCHIDA PHARM CO LTD.

XX Yokoyama S, Ogiso H, Shirouzu M, Nureki O, Ishitani R, Saito K;
PI Matsusue T, Nakao N, Muramatsu H, Shinozaki M;
XX WPI; 2003-627750/59.

XX Crystalline complex of epithelial growth factor with its receptor for
PT design of ligands and antibodies to the receptor for treatment of ulcers,
PT cancer and Parkinson's disease.

XX Example 4; Page 442-450; 489pp; Japanese.

XX The present invention describes crystals of a complex (C) of epithelial
CC growth factor (EGF) with epithelial growth factor receptor (EGFR),
CC containing a dimer of a complex of EGF with EGFR in the molar ratio 1:1.
CC Also described: (1) preparation of EGFR which can be crystallised, in
CC which recombinant EGFR is prepared using Lec8 cells and then
CC deglycosylated using glycosidase; (2) preparation of a complex of EGFR
CC with EGF or with another EGFR activity regulator (I), in which
CC crystallisable EGFR is contacted with EGF or (I); (3) screening potential
CC (1) by determining the fit of the 3D structure of (I) to that of the EGF-
CC EGFR complex; (4) substances obtained by the screening method for use as
CC agonists and antagonists of EGFR; (5) screening EGF or EGFR mutants
CC having an amino acid mutation in the EGFR dimerisation region or in the
CC EGF-EGFR interaction site, by comparing their 3D structure to that of EGF
CC -EGFR; (5) design of epitopes using the 3D structure of the EGF-EGFR
CC complex; (6) preparation of anti-EGF or anti-EGFR antibodies using the
CC epitopes identified; (7) anti-EGF or anti-EGFR antibodies prepared by
CC this method; and (8) polypeptides and their salts containing all or part
CC of the amino acid sequence of the EGFR dimerisation site. (C) has
CC cytostatic, hepatotropic, antitumor, antidiabetic, dermatological,
CC antiparkinsonian and fungicide activities. (C) can be used in the
CC identification of agonists and antagonists of EGFR for use in the
CC treatment and prevention of cancer and cancer proliferation, liver
CC function disorders, ulcers (including stomach ulcer, skin ulcer and ulcer
CC arising from diabetic complications), Parkinson's disease, bone
CC resorption disorders and ringworm. The present sequence represents a
CC human ErbB2 amino acid sequence, which is used in the exemplification of

CC	the present invention.	
XX	Sequence 1255 AA;	
SQ	Query Match 100.0%; Score 6694; DB 7; Length 1255; Best Local Similarity 100.0%; Pred. No. 0; Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
QY	1 QVCTGDMKRLRPASPETHLDMLRHLRYQGCQVQGNLELTLYLPTNASTSFLQDIOEVQGY	60
Db	24 QVCTGDMKRLRPASPETHLDMLRHLRYQGCQVQGNLELTLYLPTNASTSFLQDIOEVQGY	83
QY	61 VLIAHNOVRQVPLQRLRIVRGTFQLPEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR	120
Db	84 VLIAHNOVRQVPLQRLRIVRGTFQLPEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR	143
QY	121 SITEILKGGVLIQRNPQLCYQDTILWKDI FHKNNQALALTIDNRSRACHPCSPMCKGSR	180
Db	144 SITEILKGGVLIQRNPQLCYQDTILWKDI FHKNNQALALTIDNRSRACHPCSPMCKGSR	203
QY	181 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI	240
Db	204 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI	263
QY	241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQEV	300
Db	264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQEV	323
QY	301 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANI QEFAGCKKIFGSLAFLPESFDG	360
Db	324 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANI QEFAGCKKIFGSLAFLPESFDG	383
QY	361 DPASNTAPLOPELOQVETLEBEITGYLYISAWPDSLPLSVFQNLQVGRILHNGAYSL	420
Db	384 DPASNTAPLOPELOQVETLEBEITGYLYISAWPDSLPLSVFQNLQVGRILHNGAYSL	443
QY	421 TLQGLGISWLGRLSRELGSGLALHNNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE	480
Db	444 TLQGLGISWLGRLSRELGSGLALHNNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE	503
QY	481 CVGEGLAGHQLCARGHCWGPPTQVCNCSQFLRGQECVEECRVLQGLPREYVNAHCLP	540
Db	504 CVGEGLAGHQLCARGHCWGPPTQVCNCSQFLRGQECVEECRVLQGLPREYVNAHCLP	563
QY	541 HPECOPNGSVTCFGEADQCVACAHYKDPPECVACRCPGVKPDLSYMPIWKFPPDEEGAC	600
Db	564 HPECOPNGSVTCFGEADQCVACAHYKDPPECVACRCPGVKPDLSYMPIWKFPPDEEGAC	623
QY	601 QPCPNCTHSCVDLDDKGPAPQASPLTISI VSAVVGILLVVVLGVVFGILIKRQOKIR	660
Db	624 QPCPNCTHSCVDLDDKGPAPQASPLTISI VSAVVGILLVVVLGVVFGILIKRQOKIR	683
QY	661 KYTMRLLQETELVEPLTPSGAMPNQAOMRILKETELRKVKVLSGAFGTVYKGIWIPDG	720
Db	684 KYTMRLLQETELVEPLTPSGAMPNQAOMRILKETELRKVKVLSGAFGTVYKGIWIPDG	743
QY	721 ENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVQLMPEY	780
Db	744 ENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVQLMPEY	803
QY	781 GCLLDHVRNRRGLSQDILLNCMOI AKGMSYLEDVRLVHRDLAARNVLKSPNPKITD	840
Db	804 GCLLDHVRNRRGLSQDILLNCMOI AKGMSYLEDVRLVHRDLAARNVLKSPNPKITD	863
QY	841 FGLARLLDIDETEHADGKVPFKWVALESILRRRFTHQSDVMSYGVTVWELMTGAKPY	900
Db	864 FGLARLLDIDETEHADGKVPFKWVALESILRRRFTHQSDVMSYGVTVWELMTGAKPY	923
QY	901 DGPAREIPDLAEKGERLPQPICTIDVYIMVKWCMIDSECRPFRELVSFSESRWARDP	960
Db	924 DGPAREIPDLAEKGERLPQPICTIDVYIMVKWCMIDSECRPFRELVSFSESRWARDP	983
QY	961 QRFVVIQNEEDLGPASPLDSTFYRSLLDDDDMGDLVDAEYLVFPQQGFCCPDPAAGGMV	1020

Db 984 QRFVVIQNEGLGASPLDSTFYRSLLEDMDGLVDAAEYLVQQGFCDPAPGAGMV 1043
Qy 1021 HHRHRSSTSGGDLTLGLEPSEERAPRPLAPSEGAGSDVFDGLGMAAGLQSLPT 1080
Db 1044 HHRHRSSTSGGDLTLGLEPSEERAPRPLAPSEGAGSDVFDGLGMAAGLQSLPT 1103
Qy 1081 HDSPLQRYSEDPTVPLPSETDGTGVAPLTCSPOPEYVNPQDVRPQPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDPTVPLPSETDGTGVAPLTCSPOPEYVNPQDVRPQPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYILTPOGGAAPQHPHPPAPSPAFDNLYYW 1200
Db 1164 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYILTPOGGAAPQHPHPPAPSPAFDNLYYW 1223
Qy 1201 DQDPPERGAPPSTFKGTPTAENPEYILGLDVPV 1232
Db 1224 DQDPPERGAPPSTFKGTPTAENPEYILGLDVPV 1255

RESULT 12
ADB67621
ID ADB67621 standard; protein; 1255 AA.
XX ADB67621;
AC ADB67621;
XX
DT 04-DEC-2003 (first entry)
XX
DE Human epidermal growth factor receptor 2 protein.
KW cytostatic; human epidermal growth factor receptor-3; HER-3; heregulin;
KW HER2; tyrosine kinase activity; cancer; receptor.
XX Homo sapiens.
XX
PN W02003011897-A1.
XX
PD 13-FEB-2003.
XX
PF 29-JUL-2002; 2002WO-US023963.
XX
PR 27-JUL-2001; 2001US-0308341P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
XX Singer E, Landgraf R, Slamon DJ, Eisenberg D;
XX
XX WPI; 2003-300482/29.
DR N-PSDB; ADB67620.
XX
PT Novel human epidermal growth factor receptor 3 variant as agonist or
PT antagonist of HER3 receptor, for diagnosis/treatment of cells or
PT pathological conditions associated with aberrant expression of heregulin
PT or HER3.
XX
PS Disclosure; Page 81-82; 137pp; English.
XX
CC The invention relates to a non-naturally occurring human epidermal growth
CC factor receptor (HER)-3 variant polypeptide comprising amino acids 19-329
CC or 20-329 of the 1342 amino acid HER3 polypeptide (ADB67617) or a
CC sequence which differs from native HER3 polypeptide and having amino acid
CC substitutions at residues E43, N44, K51, E64, V66 and V110 of S1, is new.
CC The variant HER-3 specifically binds to the heregulin polypeptide
CC (ADB67619), exhibits an impaired ability to interact with HER2
CC polypeptide (ADB67621), or has an ability to inhibit the interaction
CC between wild-type HER3 and heregulin. The polypeptide is useful for
CC identifying a compound which specifically binds to heregulin binding
CC domain in a HER3 variant polypeptide. The method further involves
CC determining whether the test compound inhibits or enhances the heregulin
CC induced tyrosine kinase activity associated with a HER3 polypeptide. The
CC polypeptide is also useful for determining whether a test compound
CC modulates the interaction between a heregulin polypeptide, and the
CC variant HER-3 polypeptide. The HER-3 polypeptide is also useful for

CC inhibiting the interaction between a heregulin polypeptide and HER3
CC polypeptide, e.g. for treating cancer. The polypeptide is also useful for
CC stimulating or activating HER3 receptor. This sequence represents the
CC wild type human HER-2 polypeptide.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGTDMLKRLDPASETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 60
Db 24 QVCTGTDMLKRLDPASETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 83
Qy 61 VLIAHNVQVQLRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 VLIAHNVQVQLRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
Qy 121 SLTEILKGGVLIQORNPQLCYQDTILWKDIFHKNNQLALTIDNRSRACHPCSPMCKGSR 180
Db 144 SLTEILKGGVLIQORNPQLCYQDTILWKDIFHKNNQLALTIDNRSRACHPCSPMCKGSR 203
Qy 181 CWGESSEDCQSLTRTVCAAGCARKGPLPTDCCHQCAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGCARKGPLPTDCCHQCAGCTGPKHSDCLACLHFNHSGI 263
Qy 241 CELHCPALVNTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHMQEVT 300
Db 264 CELHCPALVNTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHMQEVT 323
Qy 301 AEDGTORCEKCKPCARVCVGLGMEHLREVRVTSANIOEFAGCKKIFGSLAFPLPSFDG 360
Db 324 AEDGTORCEKCKPCARVCVGLGMEHLREVRVTSANIOEFAGCKKIFGSLAFPLPSFDG 383
Qy 361 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
Db 384 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
Qy 421 TLQGLGISWLGLRLSRLSGSLALIIHNTHLFCFVHTVPMDQLFRNPQHALLHTANRPEDE 480
Db 444 TLQGLGISWLGLRLSRLSGSLALIIHNTHLFCFVHTVPMDQLFRNPQHALLHTANRPEDE 503
Qy 481 CVGEGGLACHQLCARGHCWGPPTQCVCNCSQFIRGQECVEECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGGLACHQLCARGHCWGPPTQCVCNCSQFIRGQECVEECRVLQGLPREYVNAHCLPC 563
Qy 541 HPECQPNQSVTCFQPEADQCVACAHYKDPFPCVARCPGKVPDLSTYMPIWKFPDEGAC 600
Db 564 HPECQPNQSVTCFQPEADQCVACAHYKDPFPCVARCPGKVPDLSTYMPIWKFPDEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRQOKIR 683
Qy 661 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAGFYVYKGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAGFYVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVLRNTPSKANKEILDEAYMAGVGSPPYVSRLLGICLTSTVQLVQLMPLY 780
Db 744 ENVKIPVAIKVLRNTPSKANKEILDEAYMAGVGSPPYVSRLLGICLTSTVQLVQLMPLY 803
Qy 781 GCLLDHVRNRLGSLQDILLNWCMTAKGMSYLEDLVRLVHRDLAARNLVKSPNHVKITD 840
Db 804 GCLLDHVRNRLGSLQDILLNWCMTAKGMSYLEDLVRLVHRDLAARNLVKSPNHVKITD 863
Qy 841 FGLARLLDIDETHYADGKVPKKNWALSILRRRTTHOSDVMSYGVTVWELMTFGAKPY 900
Db 864 FGLARLLDIDETHYADGKVPKKNWALSILRRRTTHOSDVMSYGVTVWELMTFGAKPY 923
Qy 901 DGIPTAREIPDLLEKGERLPPQPICTIDVTVMVWKCMIDSECRPRFRELVSFSEMRADP 960

Db 924 DGIPAREIPDLLEKGERLPQPPICTIDVYIMVVKWMDSECRPRPRELVSEFSRMARDP 983
Qy 961 QRFVVIQNEIDLGPASPLDSTFVRSLEDDMDGLVDAEYLYVPOQGFCCPDAPGAGGV 1020
Db 984 QRFVVIQNEIDLGPASPLDSTFVRSLEDDMDGLVDAEYLYVPOQGFCCPDAPGAGGV 1043
Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEAGSDVFDGLGMAAKGLQSLPT 1080
Db 1044 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEAGSDVFDGLGMAAKGLQSLPT 1103
Qy 1081 HDSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1163
Qy 1141 GATLEBAKTLSPCKNGVVDVAFGAVENPEVLTPOGGAAPQPHPPAPFADFONLYY 1200
Db 1164 GATLEBAKTLSPCKNGVVDVAFGAVENPEVLTPOGGAAPQPHPPAPFADFONLYY 1223
Qy 1201 DQDPPERGAPPSTFKTPTAENPEYLGLDVVP 1232
Db 1224 DQDPPERGAPPSTFKTPTAENPEYLGLDVVP 1255

RESULT 13

ADH13187
ID ADH13187 standard; protein; 1255 AA.
XX
AC ADH13187;
XX
DT 11-MAR-2004 (first entry)
XX
DE Human malignant neoplasia-related protein SeqID36.
XX
KW malignant neoplasia; cytostatic; breast cancer; ovarian cancer;
KW Gastric cancer; colon cancer; esophageal cancer; mesenchymal cancer;
KW bladder cancer; non-small cell lung cancer; human.
XX
OS Homo sapiens.
XX
PN EP1365034-A2.
XX
PD 26-NOV-2003.
XX
PF 09-MAY-2003; 2003EP-00010447.
XX
PR 21-MAY-2002; 2002EP-00010291.
PR 13-FEB-2003; 2003EP-00003112.
XX
PA (PARB) BAYER AG.
XX
PI Wirtz R, Munnes M, Kallabis H;
XX
WPI; 2004-073279/08.
DR N-PSDB; ADH13161.
XX

PT Predicting, diagnosing or prognosing malignant neoplasia by detecting at
PT least two markers, where the markers are genes from one or more
PT chromosomal regions altered in malignant neoplasia.
XX
PS Claim 12; SEQ ID NO 36; 267pp; English.
XX
CC This invention relates to a novel method for the prediction, diagnosis,
CC or prognosis of malignant neoplasia by the detection of at least two
CC markers. The invention may also be useful for the development of
CC cytostatic compounds through the regulation of the expression of a gene
CC or activity of a protein associated with malignant neoplasia. The method
CC is useful for prediction, diagnosis or prognosis of malignant neoplasia
CC such as breast cancer, ovarian cancer, gastric cancer, colon cancer,
CC esophageal cancer, mesenchymal cancer, bladder cancer or non-small cell
CC lung cancer. The polynucleotides and polypeptides defined in the
CC specification, antisense polynucleotides targeting the polynucleotides,
CC antibodies targeting either one of the polynucleotides or polypeptides,
CC and compounds identified by the screening methods are useful for

CC preventing or treating malignant neoplasia. The disease treated is
CC preferably breast cancer. The present sequence is that of a human
CC malignant neoplasia-related protein which may be used in the method of
CC the invention.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGTDMLKRLPASPETHDMLRLHYQGCVQVQGNLELTLYLPTNWSLSFLQDIQEVQY 60
Db 24 QVCTGTDMLKRLPASPETHDMLRLHYQGCVQVQGNLELTLYLPTNWSLSFLQDIQEVQY 83
Qy 61 VLIAHNQVRQVPLQRLIRVGTQLPEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQIR 120
Db 84 VLIAHNQVRQVPLQRLIRVGTQLPEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQIR 143
Qy 121 SLTEILKGGVLIQRPOLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQRPOLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPCKGSR 203
Qy 181 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 263
Qy 241 CELHCPALVTNTDTFESMNPDEGRYTFGASCVTACPNYLSLTDVSGSCTLCVPLHNQV 300
Db 264 CELHCPALVTNTDTFESMNPDEGRYTFGASCVTACPNYLSLTDVSGSCTLCVPLHNQV 323
Qy 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSANIQEPAGCKKIFGSLAFLPESPDG 360
Db 324 AEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSANIQEPAGCKKIFGSLAFLPESPDG 383
Qy 361 DPASNTAPLOPEQLQVFETLEEITGELYISAWPDSLPLSVFQNLQVIRGRILHNGAYSL 420
Db 384 DPASNTAPLOPEQLQVFETLEEITGELYISAWPDSLPLSVFQNLQVIRGRILHNGAYSL 443
Qy 421 TLQGLGISWLGRLSRLGSLALIHNNTHLCFVHTVPWDQLFRPHQALLHTANRPEDE 480
Db 444 TLQGLGISWLGRLSRLGSLALIHNNTHLCFVHTVPWDQLFRPHQALLHTANRPEDE 503
Qy 481 CVGEGLACHOLCARGHCWGPGTQCVCNCSQFLRGQECVCECRVLQGLPREYNARHCLPC 540
Db 504 CVGEGLACHOLCARGHCWGPGTQCVCNCSQFLRGQECVCECRVLQGLPREYNARHCLPC 563
Qy 541 HPECQPNQSVTCFGEADQCACAHYKDPFPCVACRCPGKPDLSYMPIWKFPEEGAC 600
Db 564 HPECQPNQSVTCFGEADQCACAHYKDPFPCVACRCPGKPDLSYMPIWKFPEEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRQOKIR 683
Qy 661 KYTMRLLQETVELVEPLTPSGAMPNQAWRIKTELKRVKVLGSGAGFTVYKGIWIPDG 720
Db 684 KYTMRLLQETVELVEPLTPSGAMPNQAWRIKTELKRVKVLGSGAGFTVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVRENTSPKANKEIIDEAYVMAGVSPVYSRLLGICLTSTVOLVTQLMPY 780
Db 744 ENVKIPVAIKVRENTSPKANKEIIDEAYVMAGVSPVYSRLLGICLTSTVOLVTQLMPY 803
Qy 781 GCLLDHVRNRLGSLQDLNACWQIAKMSVLEDDVLRVHRLAARNVLKSPNHVKITD 840
Db 804 GCLLDHVRNRLGSLQDLNACWQIAKMSVLEDDVLRVHRLAARNVLKSPNHVKITD 863
Qy 841 FGLARLLDIDETEHADGKVPKIKWMALESILRRFTHQSDVWSYGVTVWELMTGAKFY 900
Db 864 FGLARLLDIDETEHADGKVPKIKWMALESILRRFTHQSDVWSYGVTVWELMTGAKFY 923
Qy 901 DGIPAREIPDLLEKGERLPQPPICTIDVYIMVVKWMDSECRPRPRELVSEFSRMARDP 960

Db 924 DGIPARIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 983
 Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCDPAPAGGMV 1020
 Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCDPAPAGGMV 1043
 Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEGAGSDVDFDGLGMAAGLQSLPT 1080
 Db 1044 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEGAGSDVDFDGLGMAAGLQSLPT 1103
 Qy 1081 HDSPLOQYSEDPTVPLPSETDGVVAPLTCSPQPEYVNDVDRPQPPSPREGPLPAARPA 1140
 Db 1104 HDSPLOQYSEDPTVPLPSETDGVVAPLTCSPQPEYVNDVDRPQPPSPREGPLPAARPA 1163
 Qy 1141 GATLERAKTILSPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNIYYW 1200
 Db 1164 GATLERAKTILSPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNIYYW 1223
 Qy 1201 QDPPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1232
 Db 1224 QDPPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1255

RESULT 14
 ADM72831
 ID ADM72831 standard; protein; 1255 AA.
 XX AC ADM72831;
 XX DT 03-JUN-2004 (first entry)
 XX DE Human Her2/Neu protein SEQ ID NO:90.
 XX KW epitope; epitope cluster; virucide; cytostatic; vaccine; viral infection;
 XX KW cancer; tumour; human; Her2-Neu.
 XX OS Homo sapiens.
 XX PN WO2004022709-A2.
 XX PD 18-MAR-2004.
 XX PF 05-SEP-2003; 2003WO-US027706.
 XX PR 06-SEP-2002; 2002US-0409123P.
 XX PA (MANN-) MANNKIND CORP.
 XX PI Simard J/L, Diamond DC, Liu L, Liu Z;
 XX DR WPI; 2004-315564/29.
 XX DR N-PSDB; ADM72832.
 XX PT New polypeptides and encoding nucleic acids that are useful epitopes of
 PT target-associated antigens, useful for diagnosing and/or treating viral
 PT infections, cancers and tumors.
 XX PS Disclosure; SEQ ID NO 90; 357pp; English.
 XX CC The present invention describes a polypeptide (I) comprising a component
 CC selected from: (a) a polypeptide epitope having any of the 503 fully
 CC defined sequences of 8-33 amino acids (SEQ ID NO:108-610); (b) an epitope
 CC cluster comprising the polypeptide of (a); (c) a polypeptide having
 CC substantial similarity to (a) or (b); (d) a polypeptide having functional
 CC similarity to any of (a)-(c); or (e) a nucleic acid encoding the
 CC polypeptide of (a)-(d). (I) has virucide and cytostatic activities, and
 CC can be used in vaccines. The methods and compositions of the present
 CC invention are useful for the diagnosis and/or treatment of viral
 CC infections, cancers and tumors. The present sequence is used in the
 CC exemplification of the present invention.
 XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 8; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QVCTGTDMLRLPASBETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQGY 60
 Db 24 QVCTGTDMLRLPASBETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQGY 83
 Qy 61 VLIHAHQVQVPLQRLIRIVRGTOLEFEDNYALAVLDNGDPLANNTPVTGASPGGLRELQLR 120
 Db 84 VLIHAHQVQVPLQRLIRIVRGTOLEFEDNYALAVLDNGDPLANNTPVTGASPGGLRELQLR 143
 Qy 121 SLTEILKGGVLIQORNQOLCYQDTILWKDIFHKNNQALALTLIDNRSRACHPCSPMCKGSR 180
 Db 144 SLTEILKGGVLIQORNQOLCYQDTILWKDIFHKNNQALALTLIDNRSRACHPCSPMCKGSR 203
 Qy 181 CWGESSEDCOSLTRTVCAAGCARCKGPLPTDCHEQCAAGCTGPKHSDCIACLHFNHSGI 240
 Db 204 CWGESSEDCOSLTRTVCAAGCARCKGPLPTDCHEQCAAGCTGPKHSDCIACLHFNHSGI 263
 Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSCITLVCPLHNOEVT 300
 Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSCITLVCPLHNOEVT 323
 Qy 301 AEDGTORCEKCKSPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFIPESFDG 360
 Db 324 AEDGTORCEKCKSPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFIPESFDG 383
 Qy 361 DPASNTAPLOPEQLQVFETLEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
 Db 384 DPASNTAPLOPEQLQVFETLEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
 Qy 421 TLQGLGISMGLRSLRELGLALIHNNTHLCFVHTVPMDDLPNPHQALHTANREDE 480
 Db 444 TLQGLGISMGLRSLRELGLALIHNNTHLCFVHTVPMDDLPNPHQALHTANREDE 503
 Qy 481 CVGEGLACHQLCARGHCWGPPTQCVNCSQFARGQCEVBEQVQLQGLPREYVNAHCLPC 540
 Db 504 CVGEGLACHQLCARGHCWGPPTQCVNCSQFARGQCEVBEQVQLQGLPREYVNAHCLPC 563
 Qy 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPYIWKFPDEGAC 600
 Db 564 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPYIWKFPDEGAC 623
 Qy 601 QPCPINCTHSCVDLDDKGCPEAQRASPLTSISAVVGIILVVVLGVVFGILLIKRQOKIR 660
 Db 624 QPCPINCTHSCVDLDDKGCPEAQRASPLTSISAVVGIILVVVLGVVFGILLIKRQOKIR 683
 Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
 Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
 Qy 721 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSPPYVSRLGICLTSTVQLVQLMPY 780
 Db 744 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSPPYVSRLGICLTSTVQLVQLMPY 803
 Qy 781 GCLLDHVNRNGLSGQDLNLCMQLAKGMSYLEDVRLVHRDLAARNVLKSPNNVKITD 840
 Db 804 GCLLDHVNRNGLSGQDLNLCMQLAKGMSYLEDVRLVHRDLAARNVLKSPNNVKITD 863
 Qy 841 FGLARLLDIDEYHADGGKVPKMMALRESILRRRTHQSDVMSYGVTVWELMTFGAKPY 900
 Db 864 FGLARLLDIDEYHADGGKVPKMMALRESILRRRTHQSDVMSYGVTVWELMTFGAKPY 923
 Qy 901 DGPAREIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 960
 Db 924 DGPAREIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 983
 Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCDPAPAGGMV 1020
 Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCDPAPAGGMV 1043
 Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEGAGSDVDFDGLGMAAGLQSLPT 1080

Db 1044 HHRHSSTRSGGDTLGLPSEEAAPSLAPSEAGSDVFDGLGMAAKGLQSLPT 1103
Qy 1081 HDSPLQRYSEDTVPLPSETDGYVAPLTCSPQPEYVNPQDVVRPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDTVPLPSETDGYVAPLTCSPQPEYVNPQDVVRPQPPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLYYW 1200
Db 1164 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLYYW 1223
Qy 1201 DQPPPERGAPPSTFKGTPTAENPEYLGIDVPV 1232
Db 1224 DQPPPERGAPPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 15
ADO20009 standard; protein; 1255 AA.
AC ADO20009;
XX
XX 12-AUG-2004 (first entry).
XX Human PRO polypeptide #460.
XX
XX Human; PRO; immune related disorder; systemic lupus erythematosus;
KW rheumatoid arthritis; osteoarthritis; juvenile chronic arthritis;
KW systemic sclerosis; Sjogren's syndrome; vasculitis; sarcoidosis;
KW autoimmune haemolytic anaemia; autoimmune thrombocytopenia; thyroiditis;
KW diabetes mellitus; renal disease; demyelinating disease;
KW central nervous system; peripheral nervous system;
KW demyelinating polyneuropathy; Guillain-Barre syndrome;
KW chronic inflammatory demyelinating polyneuropathy.
XX
XX Homo sapiens.
XX WO2004043361-A2.
XX 27-MAY-2004.
XX 06-NOV-2003; 2003WO-US035268.
XX 08-NOV-2002; 2002US-0425235P.
XX (GETH) GENENTECH INC.
XX Fong S, Dennis K, Clark H, Chiu H, Schoenfeld J, Williams PM;
PI Wood WI, Wu TD;
XX WPI; 2004-420067/39.
XX N-PSDB; ADO20008.
XX Novel PRO polypeptide e.g., PRO69614, PRO71106, or PRO86388 useful for
PT treating an immune related disorder such as systemic lupus erythematosus,
PT rheumatoid arthritis, osteoarthritis, juvenile chronic arthritis or
PT spondyloarthritis.
XX
XX Claim 7; SEQ ID NO 920; 1731bp; English.
XX
XX The invention relates to human PRO polypeptides and the polynucleotides
CC encoding them. The polypeptides and polynucleotides are useful for
CC treating and diagnosing immune related disorders in mammals. The immune
CC related disorders include systemic lupus erythematosus, rheumatoid
CC arthritis, osteoarthritis, juvenile chronic arthritis, systemic
CC sclerosis, Sjogren's syndrome, vasculitis, sarcoidosis, autoimmune
CC haemolytic anaemia, autoimmune thrombocytopenia, thyroiditis, diabetes
CC mellitus, immune-mediated renal disease, demyelinating diseases of the
CC central or peripheral nervous system, demyelinating polyneuropathy,
CC Guillain-Barre syndrome and chronic inflammatory demyelinating
CC polyneuropathy. This sequence represents a human PRO polypeptide of the
CC invention.
XX

SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGDMKLRPLPASPETHLDMRLHYGGCVVQGNLELTVLPTNASILSPQDIOQVOGY 60
Db 24 QVCTGDMKLRPLPASPETHLDMRLHYGGCVVQGNLELTVLPTNASILSPQDIOQVOGY 83
Qy 61 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
Qy 121 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHNKQLALTLIDTNRSRACHSCSPMKGSR 180
Db 144 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHNKQLALTLIDTNRSRACHSCSPMKGSR 203
Qy 181 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLFHNSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLFHNSGI 263
Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVGSCTLVCPHLNQEVT 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVGSCTLVCPHLNQEVT 323
Qy 301 AEDGTQCEKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTQCEKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFLPESFDG 383
Qy 361 DPASNTAPLOPELOQVFETLBEITGYLISAWPDSLPDLSVFQNLQVIRGILHNGAYSL 420
Db 384 DPASNTAPLOPELOQVFETLBEITGYLISAWPDSLPDLSVFQNLQVIRGILHNGAYSL 443
Qy 421 TLQGLGISWLGRLSRLRELSGLALHNNTHLCFVHTVPWDLFRPHQALLHTANRPEDE 480
Db 444 TLQGLGISWLGRLSRLRELSGLALHNNTHLCFVHTVPWDLFRPHQALLHTANRPEDE 503
Qy 481 CVGEGGLACHOLCARGHCWGPQTQCNCQSFIRGQECVEECKVLQGLPREYVNAHRLCPC 540
Db 504 CVGEGGLACHOLCARGHCWGPQTQCNCQSFIRGQECVEECKVLQGLPREYVNAHRLCPC 563
Qy 541 HPECOPQNGSVTCFGEADQCVACAHYKDPFCVACRPSGVKPDLSYMPIMKFPDEGAC 600
Db 564 HPECOPQNGSVTCFGEADQCVACAHYKDPFCVACRPSGVKPDLSYMPIMKFPDEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGCAPAEQASPLTSIVSAVVGILLVVVLGVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGCAPAEQASPLTSIVSAVVGILLVVVLGVFGILIKRQOKIR 683
Qy 661 KYTMRLLQETELVRPLTPSGAMPNQAOMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
Db 684 KYTMRLLQETELVRPLTPSGAMPNQAOMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAVGSPYVSRLLGICLTSTVOLVTQLMFY 780
Db 744 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAVGSPYVSRLLGICLTSTVOLVTQLMFY 803
Qy 781 GCLLDHVRNRRGLSGQDILLNWCMIAGKMSVLEOVRLVHRDLAARNVLKSPNKHVITD 840
Db 804 GCLLDHVRNRRGLSGQDILLNWCMIAGKMSVLEOVRLVHRDLAARNVLKSPNKHVITD 863
Qy 841 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTFGAKPY 923
Qy 901 DGPAREIPDLLEKGRRLPQPPICITIDVTVMVWCKMIDSECRPPRELVSFESRWARDP 960
Db 924 DGPAREIPDLLEKGRRLPQPPICITIDVTVMVWCKMIDSECRPPRELVSFESRWARDP 983
Qy 961 ORFWIQTQEDIGPASPILDSTFVRSILLEDDMDGLVDABEYLVPOQGFCCPDAPGAGGMV 1020
Db 984 QRFVVIQNEDLGPAASPILDSTFVRSILLEDDMDGLVDABEYLVPOQGFCCPDAPGAGGMV 1043

Qy	1021	HHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEGAGSDVFDGDLGMGAAGLQSLPT	1080
Db	1044	HHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEGAGSDVFDGDLGMGAAGLQSLPT	1103
Qy	1081	HDPSPLOQYSEDPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPESPREGPLPAARPA	1140
Db	1104	HDPSPLOQYSEDPTVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPESPREGPLPAARPA	1163
Qy	1141	GATLERAKTILSPGKNGVVKDVFAGGAVENPEYLTPOGGAPOPHPPPAESPAFDNLYYW	1200
Db	1164	GATLERAKTILSPGKNGVVKDVFAGGAVENPEYLTPOGGAPOPHPPPAESPAFDNLYYW	1223
Qy	1201	DQPPPERGAPPSTFKGTPTAENPEYLGLDVPV	1232
Db	1224	DQPPPERGAPPSTFKGTPTAENPEYLGLDVPV	1255

Search completed: January 25, 2005, 21:23:17
Job time : 140.275 secs

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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:16:15 ; Search time 36.8376 Seconds
(without alignments)
3277.960 Million cell updates/sec

Title: US-09-806-703A-4
Perfect score: 6812
Sequence: 1 MELAALCRWGLLALLPPGA.....TFKGTPTAENPEYLGLDVPV 1255

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:.*
1: Pirl1.*
2: Pirl2.*
3: Pirl3.*
4: Pirl4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6806	99.9	1255	1 A24571	protein-tyrosine k
2	5988	87.9	1260	1 TVRTNU	protein-tyrosine k
3	5984.5	87.9	1254	2 I48161	p-185 precursor -
4	3168	46.5	1210	1 GQHUE	epidermal growth f
5	3144	46.2	1210	2 A53183	epidermal growth f
6	3123.5	45.9	1223	1 TVCHLV	epidermal growth f
7	3003.5	44.1	1308	2 A47253	epidermal growth f
8	2701	39.7	1166	1 S06142	protein-tyrosine k
9	2431.5	35.7	1342	2 A36223	kinase-related tra
10	2346.5	34.4	1339	2 JC4387	epidermal growth f
11	1766.5	25.9	698	1 TVFVLH	protein-tyrosine k
12	1703	25.0	604	1 TVFVLH	protein-tyrosine k
13	1652.5	24.3	1330	1 GQFEE	epidermal growth f
14	1647	24.2	544	2 S35745	protein-tyrosine k
15	1640	24.1	545	2 S00727	kinase-related tra
16	1623	23.8	540	2 B44776	protein-tyrosine k
17	1621	23.8	540	1 TVFVFB	protein-tyrosine k
18	1536	22.5	644	2 A36325	epidermal growth f
19	1302	19.1	1323	2 E98257	protein let-23 [im
20	1302	19.1	1374	2 S70712	protein-tyrosine k
21	1214	17.8	1369	2 S70713	protein-tyrosine k
22	1177	17.3	1717	1 A45558	epidermal growth f
23	1155	17.0	527	2 A42032	epidermal growth f
24	997.5	14.6	843	2 A37131	epidermal growth f
25	806.5	11.8	346	2 S13807	protein-tyrosine k
26	754.5	11.1	311	2 S13808	protein-tyrosine k
27	735	10.8	1363	2 T43220	insulin-like growt
28	718	10.5	1382	1 INHUR	insulin receptor p
29	711	10.4	1383	2 A36080	insulin receptor p

ALIGNMENTS

RESULT 1

A24571

protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human
N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein erb
C;Species: Homo sapiens (man)
C;Date: 25-Oct-1987 #sequence revision 06-Dec-1996 #text change 09-Jul-2004
C;Accession: A24571; A25491; A44188; B44188; I59509; I57622
R;Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Saito, T.;
Nature 319, 230-234, 1986
A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth
A;Reference number: A24571; MUID:86118663; PMID:3003577
A;Accession: A24571
A;Molecule type: mRNA
A;Residues: 1-1255 <YAM>
A;Cross-references: UNIPROT:P04626; GB:X03363; NID:g31197; PIDN:CAA27060.1; PID:g31198
R;Semba, K.; Kamata, N.; Toyoshima, K.; Yamamoto, T.
Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1985
A;Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epider
A;Reference number: A25491; MUID:86016729; PMID:2995967
A;Accession: A25491
A;Molecule type: DNA
A;Residues: 737-1031 <SEM>
A;Cross-references: GB:M11767; NID:g182163; PIDN:AAA35808.1; PID:g553282
R;Cousseens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg,
Science 230, 1132-1139, 1985
A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chromo
A;Reference number: A44188; MUID:86070181; PMID:2999974
A;Accession: A44188
A;Molecule type: DNA
A;Residues: 740-910 <COU1>
A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989
A;Accession: B44188
A;Molecule type: mRNA
A;Residues: 1-517; 'RALL', 522, 'S', 524-654, 'V', 656-1169, 'A', 1171-1255 <COU2>
A;Cross-references: GB:M11730; NID:g183986
R;King, C.R.; Kraus, M.H.; Aaronson, S.A.
Science 229, 974-976, 1985
A;Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma.
A;Reference number: I59509; MUID:85272597; PMID:2992089
A;Accession: I59509
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 832-909 <REX>
A;Cross-references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808
R;Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D.
Mol. Cell. Biol. 7, 2597-2601, 1987
A;Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptiona
A;Reference number: I57622; MUID:87286898; PMID:3039351
A;Accession: I57622
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-191 <TAL>

insulin receptor p
insulin-like growt
insulin receptor-r
protein-tyrosine k
insulin receptor-r
insulin-like growt
insulin-like growt
insulin receptor -
insulin receptor -
insulin receptor -
protein-tyrosine k
protein-tyrosine k
tyrosine kinase Mp
protein-tyrosine k
protein-tyrosine k
protein-tyrosine k

A;Cross-references: GB:M16792; NID:G183983; PIDN:AAA58637.1; PID:G553332
 C;Comment: Amplification and overexpression of this erbB-related gene occurs in about 30
 C;Genetics:
 A;Gene: GDB:ERBB2; NCL; NEU; HER-2
 A;Cross-references: GDB:120613; OMIM:164870
 A;Map position: 17q21.1-17q21.1
 A;Introns: 25/1; 75/3; 147/1; 883/3
 A;Note: the list of introns is incomplete
 C;Function:
 A;Description: catalyzes the phosphorylation of a peptidyl tyrosine residue by ATP
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
 inase
 F;1-21/Domain: signal sequence #status predicted <SIG>
 F;22-1255/Product: protein-tyrosine kinase erbB2 #status predicted <MAT>
 F;22-633/Domain: extracellular #status predicted <EXR>
 F;70-304/Domain: EGF receptor extracellular domain repeat <BE1>
 F;395-605/Domain: EGF receptor extracellular domain repeat <EE2>
 F;654-675/Domain: transmembrane #status predicted <TM>
 F;676-1255/Domain: intracellular #status predicted <INT>
 F;718-983/Domain: protein kinase homology <KIN>
 F;726-734/Region: protein kinase ATP-binding motif
 F;68,124,187,259,530,571,629/Binding site: carboxydrate (Asn) (covalent) #status predict
 F;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
 F;753/Active site: Lys #status predicted
 F;1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)

Query Match 99.9%; Score 6806; DB 1; Length 1255;
 Best Local Similarity 99.8%; Pred. No. 1.4e-275;
 Matches 1253; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY	1	MELAAICRWGLLALLPPGAASQVCTGTDMLRLPASPTHLDMLRLHYQGQVQGNL	60
DB	1	MELAAICRWGLLALLPPGAASQVCTGTDMLRLPASPTHLDMLRLHYQGQVQGNL	60
QY	61	ELTYLPTNASLFLQDIQEQGYVLIHAHQVQVPLQRLIRVGTQLFEDNYALAVLDNG	120
DB	61	ELTYLPTNASLFLQDIQEQGYVLIHAHQVQVPLQRLIRVGTQLFEDNYALAVLDNG	120
QY	121	DPLNNTTPVTVGASPGGLRELQLRLSLTEILKGGVLIQBNPOLCYQDTILWKDIFPKKNOLA	180
DB	121	DPLNNTTPVTVGASPGGLRELQLRLSLTEILKGGVLIQBNPOLCYQDTILWKDIFPKKNOLA	180
QY	181	LTLLDITNRSRACHPCSPMKSGSCWGSSEDCOSLRTVTCAGCARCKGKPLPDCCHEQC	240
DB	181	LTLLDITNRSRACHPCSPMKSGSCWGSSEDCOSLRTVTCAGCARCKGKPLPDCCHEQC	240
QY	241	AAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFSPMPNPGRYTFFGASCVTACP	300
DB	241	AAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTFSPMPNPGRYTFFGASCVTACP	300
QY	301	YNYLSTDVGSCTVCLPLHNOEVAEDGTQRCCKSPCARVCYGLGMEHLREVRATYSAN	360
DB	301	YNYLSTDVGSCTVCLPLHNOEVAEDGTQRCCKSPCARVCYGLGMEHLREVRATYSAN	360
QY	361	IQEFAGCKTIFGSLAFPEFDGDPASNTAPLOEQLQVPELLEITGYLIYISAWPDSLP	420
DB	361	IQEFAGCKTIFGSLAFPEFDGDPASNTAPLOEQLQVPELLEITGYLIYISAWPDSLP	420
QY	421	DLSVFQNLQVIRGRILNHGAYSITLQGLGISWLGSLRSLRELGLALIHNNTHLCFVHTV	480
DB	421	DLSVFQNLQVIRGRILNHGAYSITLQGLGISWLGSLRSLRELGLALIHNNTHLCFVHTV	480
QY	481	PWDLFRNPQALLHTANRDEECVGEGLACHQIARGHCWGPGPTQCNCVSFLRGQEC	540
DB	481	PWDLFRNPQALLHTANRDEECVGEGLACHQIARGHCWGPGPTQCNCVSFLRGQEC	540
QY	541	VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFPEADOCVCAHYKDPFPCVARC	600
DB	541	VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFPEADOCVCAHYKDPFPCVARC	600
QY	601	PSGVKPDLSYMPIWKFPDESGACPCPCINCTHSCVDLDDKGCAPARQASPLTSISAVVG	660

RESULT 2
TVETNU

protein-tyrosine kinase (EC 2.7.1.112) neu precursor - rat

C;Species: Rattus norvegicus (Norway rat)

C;Date: 31-Dec-1988 #sequence_revision 31-Dec-1988 #text_change 09-Jul-2004

C;Accession: A24562; A61204

R;Bargmann, C.I.; Hung, M.C.; Weinberg, R.A.

Nature 319, 226-230, 1986

A;Title: The neu oncogene encodes an epidermal growth factor receptor-related protein.

A;Reference number: A24562; MUID:86118662; PMID:3945311

A;Accession: A24562

A;Molecule type: mRNA

A;Residues: 1-1260 <BAR>

A;Cross-references: UNIPROT:P06494; EMBL:X03362; NID:G56745; PIDN:CAA27059.1; PID:G5674

R;Masui, T.; Mann, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smith, R.A.; Cohen,

Carcinogenesis 12, 1975-1978, 1991

A;Title: Direct DNA sequencing of the rat neu oncogene transmembrane domain reveals no

2-thiazolyl]formamide or N-methyl-N-nitrosourea.

A;Reference number: A61204; MUID:92035293; PMID:1682063

A;Accession: A61204

A;Status: preliminary

A;Molecule type: DNA

A;Residues: 637-663, 'V', 665-702 <MAS>

A;Note: authors translated the codon GCA for residue 25 as Val

C;Genetics:

A;Gene: neu

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phosph

F;1-19/Domain: signal sequence #status predicted <SIG>

F;20-1260/Product: protein-tyrosine kinase neu #status predicted <MAT>

F:658-680/Domain: transmembrane #status predicted <TM>
F:723-988/Domain: protein kinase homology <KIN>
F:731-739/Region: protein kinase ATP-binding motif
F:71-191,263,535,576,634/Binding site: carbohydrate (Aen) (covalent) #status predicted
F:691/Binding site: phosphate (Thr) (covalent) #status predicted
F:758/Active site: Lys #status predicted
F:882,1227,1253/Binding site: phosphate (Tyr) (covalent) #status predicted

Query Match 87.9%; Score 5988; DB 1; Length 1260;
Best Local Similarity 87.7%; Pred. No. 1.3e-241;
Matches 1103; Conservative 50; Mismatches 102; Indels 2; Gaps 2;

Qy 1 MELAALCRWGLLLALLPPGAASCTQCTGDMKRLPASPEHDLMLRHLVYGGCQVQGNL 60
Db 4 MELAALCRWGLLLALLPPGIAGTQCTGDMKRLPASPEHDLMLRHLVYGGCQVQGNL 63
Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHAHQVQVPLQRLIRVGTQLPEDNYALAVLDNG 120
Db 64 ELTYVPPANASLSFLQDIQEVQGYVLIHAHQVQVPLQRLIRVGTQLPEDNYALAVLDNR 123
Qy 121 DPLNNTTPTVT-GASPGGLRELQRLSLTEILKGGVLIQIRNPOLCYQDTILWKDIFHKNNQL 179
Db 124 DPQNVAASTPRTPEGLRELQRLSLTEILKGGVLIIRGNPOLCYQDVMWLVKDFRKNQL 183
Qy 180 ALTLIDNRSRACHPCSPMKSGSCWGESSEDCQSLLTRTVCCAGCARCKGLPTDCCHEQ 239
Db 184 APVDIDNRSRACPPCAPACKDNHCWGESPEDCQILGTCTSCGACRCKGLPTDCCHEQ 243
Qy 240 CAAGCTGPKSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTAC 299
Db 244 CAAGCTGPKSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTTC 303
Qy 300 PNYLSTDVGSCTLVCPILHNOEVTAEQTCRCKSPCARVCYGLGWEHLREVRVTS 359
Db 304 PNYLSTEVGSCTLVCPILHNOEVTAEQTCRCKSPCARVCYGLGWEHLRGARLTS 363
Qy 360 NIOFAGCKIKFGLSLFESFDGDPASNTAPLOEQVLFETLEEITGYLISAWPDSL 419
Db 364 NVQEFDCCKIKFGLSLFESFDGDPSSGIAPLAPLOEQVLFETLEEITGYLISAWPDSL 423
Qy 420 PDLVSFQNLQVIRGILHNGAYSITLQGLGSIWGLSLRSLRGLSLALIHNTLCLFVHT 479
Db 424 RDLVSFQNLRIIRGILHNGAYSITLQGLGSIWGLSLRSLRGLSLALIHNTLCLFVHT 483
Qy 480 VPWDLFRNPHQALLHTANRPEDS-CYGEGLACHOLCARGHCWGPPTQCVNCSQFLRGQ 538
Db 484 VPWDLFRNPHQALLHSGNRPEEDLCVSSGLVNCNLCAHGCWGPPTQCVNCSHFHURGQ 543
Qy 539 ECVEECRVLQGLPREYVYVNRHCLPCHPECOQNGSVTCFGEADQCVACAHYKDPFPCVA 598
Db 544 ECVEECRVWKLPREYVSDKELPCHPECOQNSSETCFGEADQCAAHYKDSSCVA 603
Qy 599 RCPGSGVXPDLSYMPIWKPFBDEGACQPCPINCTHSCVDLDDKGPAPQASPLTSIVASV 658
Db 604 RCPGSGVXPDLSYMPIWKPFBDEGICQPCPINCTHSCVDLDBRGCPAQASPLTSIVATV 663
Qy 659 VGIILVVVLGVVFGILIKRQOKIRKYTMRELLQETELVEPLTPSGAMPNQAQRILKET 718
Db 664 EGVLLFLLVVVGVVGLIKRRQOKIRKYTMRELLQETELVEPLTPSGAMPNQAQRILKET 723
Qy 719 ELRKVKVLGSAFGTVYKGIWIPQGENVKIPVAIKVLRNTPSKANKEILDEAVYVAGV 778
Db 724 ELRKVKVLGSAFGTVYKGIWIPQGENVKIPVAIKVLRNTPSKANKEILDEAVYVAGV 783
Qy 779 SPYVSRLLGICLTSTVOLVTQMPYGLLDHVRNRRGLSGQDILLNMCQIAGWSYLED 838
Db 784 SPYVSRLLGICLTSTVOLVTQMPYGLLDHVRHRRGLSGQDILLNMCVQIAGWSYLED 843
Qy 839 VRLVHRDLAARNVLKSPNHVKITDRGLARLLDIDETEHADGKVPKWMALSIILRRR 898
Db 844 VRLVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKWMALSIILRRR 903
Qy 899 FTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGBRLPQPPICTIDVYIMVVK 958

Db 904 FTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGBRLPQPPICTIDVYIMVVK 963
Qy 959 WMLDSERCPRELVSSEFSRMARDPQRFVVIQNEIDGLPASPLDSTFVRSLEDDDDMGDLV 1018
Db 964 WMLDSERCPRELVSSEFSRMARDPQRFVVIQNEIDGLPSSPMDSTFVRSLEDDDDMGDLV 1023
Qy 1019 DAEYLVPOQGFPCPDPAAGAGGMVHRHSSSTRSGGDLTLGLEPSESEAPRSLAPS 1078
Db 1024 DAEYLVPOQGFSPDPTGCTGTAHRRHSSSTRSGGDLTLGLEPSESEAPRSLAPS 1083
Qy 1079 EGAGSDVFDGDLGWAAGKLSLPTHDPSPLQYSEDPVPLPSETDGYVAPLTCSPQPE 1138
Db 1084 EGAGSDVFDGDLGWAAGKLSLPHDLSPLQYSEDPVPLPSETDGYVAPLTCSPQPE 1143
Qy 1139 YVNOQVVRPQPPSPRSGPLPAARPGATLERAKTILSPKNGVVKDVPFAGGAVENPEVLT 1198
Db 1144 YVNOQVVRPQPPSPRSGPLPAARPGATLERAKTILSPKNGVVKDVPFAGGAVENPEVLT 1203
Qy 1199 PQGGAAPQPPHPPAFPAFONLYWQDPPERGAAPPSTFKGTPTAENPEYLGLDVVP 1255
Db 1204 PRGTAAPPPHPPAFPAFONLYWQDPPERGAAPPSTFKGTPTAENPEYLGLDVVP 1260

RESULT 3
I48161
P-185 precursor - golden hamster
C:Species: Mesocricetus auratus (golden hamster)
C:Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C:Accession: I48161
R:Nakamura, T.; Ushijima, T.; Ishizaka, Y.; Nagao, M.; Araki, M.; Yamazaki, Y.; Ishikawa
Gene 140, 251-255, 1994
A:Title: Cloning and activation of the Syrian hamster neu proto-oncogene.
A:Reference number: I48161; MUID:94193007; PMID:7908275
A:Accession: I48161
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-1254 <RES>
A:Cross-references: UNIPROT:Q60553; GB:D16295; NID:g493236; PIDN:BAA03801.1; PID:g74759
C:Geneids:
A:Gene: neu
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP
F:718-983/Domain: protein kinase homology <KIN>
F:726-734/Region: protein kinase ATP-binding motif

Query Match 87.9%; Score 5984.5; DB 2; Length 1254;
Best Local Similarity 87.6%; Pred. No. 1.8e-241;
Matches 1099; Conservative 58; Mismatches 97; Indels 1; Gaps 1;

Qy 1 MELAALCRWGLLLALLPPGAASCTQCTGDMKRLPASPEHDLMLRHLVYGGCQVQGNL 60
Db 1 MELAALCRWGLLLALLSPGASCTQCTGDMKRLPASPEHDLMLRHLVYGGCQVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHAHQVQVPLQRLIRVGTQLPEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIHAHQVQVPLQRLIRVGTQLPEDNYALAVLDNR 120
Qy 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQIRNPOLCYQDTILWKDIFHKNNQL 180
Db 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQIRNPOLCYQDTILWKDIFHKNNQL 180
Qy 181 LTLDITNRSRACHPCSPMKSGSCWGESSEDCQSLLTRTVCCAGCARCKGLPTDCCHEQ 240
Db 181 FVDIDNRSRACHPCSPMKSGSCWGESSEDCQSLLTRTVCCAGCARCKGLPTDCCHEQ 240
Qy 241 AAGCTGPKSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTAC 300
Db 241 AAGCTGPKSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTTC 300
Qy 301 YNYLSTDVGSCTLVCPILHNOEVTAEQTCRCKSPCARVCYGLGWEHLREVRVTSAN 360
Db 301 YNYLSTEVGSCTLVCPILHNOEVTAEQTCRCKSPCARVCYGLGWEHLRGARLTSAN 360

A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DNA
 R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.; Der, C.J.
 Cell 59, 33-43, 1989
 A;Title: Functional independence of the epidermal growth factor receptor from a domain
 A;Reference number: A33331; MUID:9003223; PMID:2790960
 A;Contents: annotation; internalization signal
 C;Comment: Binding of EGF to the receptor leads to internalization of the EGF-receptor
 C;Genetics:

A;Gene: GDB:EGFR
 A;Cross-references: GDB:120610; OMIM:131550
 A;Map position: 7p12.3-7p12.1
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;25-1210/Product: EGF receptor #status predicted <MAT>
 F;25-645/Domain: extracellular #status predicted <EXT>
 F;75-300/Domain: EGF receptor extracellular domain repeat <BE1>
 F;390-600/Domain: EGF receptor extracellular domain repeat <BE2>
 F;646-668/Domain: transmembrane #status predicted <TM>
 F;669-1210/Domain: intracellular #status predicted <INT>
 F;710-975/Domain: protein kinase homology <KIN>
 F;718-726/Region: protein kinase ATP-binding motif
 F;999-1046/Region: coated-pit mediated internalization signal
 F;1047-1210/Region: inhibitory
 F;128,175,352,413,444,528,603/Binding site: carbohydrate (Asn) (covalent) #status predic
 F;745/Active site: Lys #status experimental

Query Match 46.58; Score 3168; DB 1; Length 1210;
 Best Local Similarity 49.88; Pred. No. 1.6e-124; Indels 106; Gaps 21;
 Matches 630; Conservative 178; Mismatches 351;
 QY 11 LLAALLPPGAA--STOVCTGDMKRLPASPETHDMLRLHYOCQVQGNLELTLYPTN 68
 DB 14 LLAALCPASRALEKKVCQTSNKLTLQGTFFDHFSLQRMFNCEVVLGNLEITVQVN 73
 QY 69 ASLSFLQDIQEVGYVLIANQVQVPLQRLRIVRGQLFEDNYALAVLDNGDPLNNTTP 128
 DB 74 YDLSFLKTIQEVAGYVLIANTVERIPLENLQIRGNMYENSVALAVLSNYD----- 126
 QY 129 VTGASFGELQLRSITELKGGVLIQNPOLCYQDTILWKDIFKHNQALATLDTNR 188
 DB 127 ---ANKTLKELPMRNQLQELHGAVRFSNNPNCNVEISQWRDIVSDFLSNMDFQNH 183
 QY 189 SRACHPCSMCKGSRGSESSDCQSLRTVTCAGGA-RCKGPLPTDCHEQCAAGCTGP 247
 DB 184 LGSQCKDPCSPGSCWAGEENCQKLTICQAQCSGRCRGKSPSDCCNQAAGCTGP 243
 QY 248 KHSDCLACHFNHSGICELHCPALVYNTDTFSPMPNPEGRTYFGASCVTACPYNYLST 307
 DB 244 RESDCLVCRFRDEATCKTCCPLMLNPTTYQMDVNPNEGKYSFGATCVKKCPNYYVTD 303
 QY 308 VGSCTLVCLPHNQVETADGTQRCCKSKPCARVCYGLGNEHLREVRVAVTSANIQEPAG 367
 DB 304 HGSVCVACGADSYEM-EEDGVKCKKCEGPCRVCGIGIGFQKDSINATNIRKIFNC 362
 QY 368 KTFGSLAFPESDGDPASNTAPLOEQVQVETLIEITGLYISAWPDSLDLSVFON 427
 DB 363 TSIISGLHLPLVAFRGDSFTHTPDQELDLTKVKEITGFLLIQWPNERTDLAFEN 422
 QY 428 LQVIRGRILHNGAYSLTLOGISLWGLRLSLRBLGSLALIHNTLHLCFVHTVPQDLFR 487
 DB 423 LEIIRGRTKHQGFSLAVWSLNTISLGLSLKLSISDGVIIISGNKNCYANTINWKLFG 482
 QY 488 NPHQALLHTANRDEDECVGSLACHQLCARGHGWGPTQVNCQSLRQECVCECVL 547
 DB 483 TSGQTKTIISNRGNSCKATGQVCHALCSPEGCWGPEDRCVCRNVSRGRECVDRCKLL 542
 QY 548 QGLPREVYNARHCLPCHPECPQNGSVTCFGEADQVACAHYKDPFPFCVAPCPGVKPD 607
 DB 543 EGEPRFEVENSEICIQHPECLPQAMNITCTGRGPDNCIQAHYIDGPHCVKTCFAGWME 602
 QY 608 LSYMPIWKFPDEBACQPCPINCTHSCVDLDDKGCFAEQRASPLTSIVSAVVG---ILLV 664

DB 603 NNTL-VMKYADAGHVCHLCPNCTYCTGPGLEGCTPNQPKIP--SIATGMGALLLLV 659
 QY 665 VLVGVVFGILLIKERQKIRKYWRRLLOETELVEPLTPSCAMPNQOAMRILKETELKVK 724
 DB 660 VALGIG---LFWRRRHVVRKRTURRLQERLVEPLTPSGEAPNQALLRILKETEPKKIK 716
 QY 725 VLGSAGFTVYKIGWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYNVAGVSPVSR 784
 DB 717 VLGSAGFTVYKGLWIPEGEKVKIPVAIKELREATSPKANKEILDEAYNVASVDNPHVC 776
 QY 785 LIGICLTSTVQLVQLMPYVGLLDHVRNRRGLGSDLLNWCQIAKMGSYLDEVRVLVR 844
 DB 777 LLIGICLTSTVQLITQLMPFGCLLDYVREHKNDNGSYLLNWCQIAKMGSYLDEVRVLVR 836
 QY 845 DLAAARNVLKSPNHVKITDGLARLADIDETVHADGGKVPKIKWMALESILRRRFTQSD 904
 DB 837 DLAAARNVLKTPQHVKITDGLAKLGAEBEYHAGGKVPKIKWMALESILHRIYTHQSD 896
 QY 905 VMSYGVTVVWELMTFGAKPYDGPAREIPDLLEKGERLPQPICTIDVYIMVVKWMIDSE 964
 DB 897 VMSYGVTVVWELMTFGSKPYDGPAREIPDLLEKGERLPQPICTIDVYIMVVKWMIDAD 956
 QY 965 CRPRFRELVSERMDARDQRFVIO-NEDLGPASPLDSTFYRSLLEDDDMGDLVDAEY 1023
 DB 957 SRPKFRELIIERSKWARDQRYLVIOQDERMHLPSPTDSNFYRALMDEEDMDVDVDAEY 1016
 QY 1024 LVPQGGFCFCDPAPGAGGVHHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEGAGS 1083
 DB 1017 LIPQGGFF-----SSPSTRPLUSSATS 1042
 QY 1084 DVFDDGLMGAAKGLQSLPHTDPSPLQYSEDPTVPLPSET--DGVVAPLTCSPQPEYVN 1141
 DB 1043 N-NSIVACIDRNLQSCPIKEDSFQRYSSDPTGALTEDSIDDTL-----PVPEYIN 1094
 QY 1142 QPDVRQPPSPREGPLPAARAGATLERAKTISPGKGVVQVFAFGAVENPEYL-TPQ 1200
 DB 1095 Q-SVPRKPAQSVQNPVYHQPLNP-----APSRDPHYQD--PHSTAVGNPEYLNVTQ 1143
 QY 1201 GGAAPQHPAPPAPAFDNLVYWDQ-----DP-----PERGAPSTFKGTPTAE 1244
 DB 1144 -----PTCVNSTFDSFAHWAQKSHQISLDNPDYQDFFPKAKPNIGFKGS-TAE 1193
 QY 1245 NPEYL 1249
 DB 1194 NAEYL 1198
 RESULT 5
 A53183
 epidermal growth factor receptor precursor - mouse
 C;Species: Mus musculus (house mouse)
 C;Date: 06-Jan-1995 #sequence revision 06-Jan-1995 #text change 09-Jul-2004
 C;Accession: A53183; A43818; S24942; A28941; S45325; I49643
 R;Luetteke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, H.S.; Jenkins, N.A.;
 Genes Dev. 8, 399-413, 1994
 A;Title: The mouse waved-2 phenotype results from a point mutation in the EGF receptor
 A;Reference number: A53183; MUID:94170986; PMID:8125255
 A;Accession: A53183
 A;Molecule type: mRNA
 A;Residues: 1-1210 <LUS>
 A;Cross-references: UNIPROT:Q01279; GB:U03425
 R;Avivi, A.; Lax, I.; Ullrich, A.; Schlessinger, J.; Givol, D.; Morse, B.
 Oncogene 6, 673-676, 1991
 A;Title: Comparison of EGF receptor sequences as a guide to study the ligand binding si
 A;Reference number: A43818; MUID:91232866; PMID:2030916
 A;Accession: A43818
 A;Molecule type: mRNA
 A;Residues: 1-714 <AVI>
 A;Cross-references: GB:X59698
 R;Singer, D.P.; Serrero, G.
 submitted to the EMBL Data Library, June 1992
 A;Reference number: S24942
 A;Accession: S24942

A:Molecule type: mRNA
 A:Residues: 969-971, 'K', 973-1115, 'D' <EIS>
 A:Cross-references: EMBL:Z12608
 R:Heisermann, G.J.; Gill, G.N.
 J. Biol. Chem. 263, 13152-13158, 1988
 A:Title: Epidermal growth factor receptor threonine and serine residues phosphorylated
 A:Reference number: A28941; MUID:88330814; PMID:3138233
 A:Accession: A28941
 A:Molecule type: protein
 A:Residues: 689-694, 'X', 696-704, 'L', 706-707, 989-992, 'XX', 995-996, 'X', 998-1000; 1002-1009,
 R:Higgs, M.L.; Dunn, A.R.; Alexander, W.S.
 submitted to the EMBL Data Library, April 1994
 A:Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor
 A:Reference number: S45325
 A:Accession: S45325
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-971, 'K', 973-1210 <VER>
 A:Cross-references: EMBL:X78987; NID:G488830; PIDN:CAA55587.1; PID:G488831
 R:Faria, B.C.; Das, S.K.; Andrews, G.K.; Day, S.K.
 Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
 A:Title: Expression of the epidermal growth factor receptor gene is regulated in mouse b
 A:Reference number: I49643; MUID:93126380; PMID:7678348
 A:Accession: I49643
 A:Status: translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 12-20, 22-132 <RES>
 A:Cross-references: GB:L06864; NID:g193001; PIDN:AAA53029.1; PID:G567201
 C:Genetics:
 A:Gene: EGFR
 C:Superfamily: epidermal growth factor receptor; protein kinase homology
 C:Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphop
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;648-670/Domain: transmembrane #status predicted <TM>
 F;712-977/Domain: protein kinase homology <KIN>
 F;720-728/Region: protein kinase ATP-binding motif
 F;680,695/Binding site: phosphate (Thr) (covalent) #status experimental
 F;897,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental
 F;993/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental
 F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental
 F;1197/Binding site: phosphate (Tyr) (covalent) #status experimental

Query Match 46.2%; Score 3144; DB 2; Length 1210;
 Best Local Similarity 49.8%; Pred. No. 1.6e-123; Mismatches 359; Indels 110; Gaps 23;
 Matches 633; Conservative 170;

QY 11 LLLALLPPGAA--STQVCTGDMKLRLPASPETHLDMLRLHYQGCQVQGNLELTYPN 68
 DB 14 LLTALCAAGALEKKVCCQTSNRLTQLGTFEDHFLSLQRMYNVCEVLGNLEITVQRN 73
 QY 69 ASLSFLDIDQEVGYVLIANQVQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTP 128
 DB 74 YDLSFLKTIQEVAGYVLIANTVRIPLNLEIQLIRGNALYENTYALAILSN----- 124
 QY 129 VTGASPGLELOLRSLTEILKGVLIQVLPOLCYODTILWKDI----FHKNQLALTLI 184
 DB 125 -YGTNRTGLRLPMRLNQLLEILGAVRPSNPILCNMDTIQWRDIQVNVFNSNMSMDL---- 180
 QY 185 DTRNSRACHPCSPMKGSRGWSSEDCQSLRTVTCAGGCA-RCKGPLEPTDCHEQCAAG 243
 DB 181 -QSHPPSCPKDPCPNKSGCWGGGEENCOKLTIIICAAQCQSHRCRGRSPSDCHNCQAAG 239
 QY 244 CTGPKSDCLACLPNHSGLCELHCPALVTYNTDTESMENPEGRYTFGASCVTACPNY 303
 DB 240 CTGPRESDCLVQKQFQDEATCKDTCPLMLNLYNTTYQMDVNPPEKYSFGATCVKCKPRNY 299
 QY 304 LSTDVSGCTLVCLPHNEVTAEDGTORCEKSPCARVCVGLGMEHLRVARVTSANIOE 363
 DB 300 VVTDHSGCVACGPDYEV-EEDGIRKCKDGPCRCVCGIGIGEFKDTLSINATNIKH 358
 QY 364 FAGCKITGSLATLPESFDGDPASNTAPLOEQVFETLEETIGYLYISAWPDSLPDLIS 423
 DB 359 FKYCTAISGDLHILPVAFKGDSFRTPTPLDPLRELEILKTVKEITGTGFLIIQAWPDNWDLH 418

RESULT 6

TVCHLV

epidermal growth factor receptor precursor - chicken

N;Domain: protein-tyrosine kinase (EC 2.7.1.112) erbB

C;Species: Gallus gallus (chicken)

C;Date: 28-Feb-1986 #sequence_revision 05-May-1995 #text_change 09-Jul-2004

C;Accession: A27720; A00643

R;tax, i.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, A.; Vennsr

Mol. Cell. Biol. 8, 1970-1978, 1988

A;Title: Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression in mo

A;Reference number: A27720; MUID:88261272; PMID:3260329

QY 424 VPONLOVIRGRILLHNGAYSLTLOGLIGISWLGRLSRLGSLALHNNHILCFVHTVPWD 483
 DB 419 AFENLEIIRGTRKQHQFSLAVVGLNITSLGLRSLSKESDGVIIISGRNRLCYANTINWK 478
 QY 484 OLFRNPHOALLHTANRPEDECVEGLACHOLCARGHCWGPQTQCVCNSQFURGQECVBE 543
 DB 479 KLFGTPNQTKIMNNAEKDKAVNHVCNPLCSSEGCWGPPEPRDCVQNSRGRECEVEK 538
 QY 544 CRVLOGLPREYVNAHCLPCHPEQOPQNGSVTCFGEADQCACVAKYKDPFCVACRPSG 603
 DB 539 CNILSGEPREFVENSECICQPECLPQAMNITCTGRGPDNCICQAHYIDGPHCVKTCAG 598
 QY 604 VKPDLSYMPIWKFPEBEGACQPCINCTHSCVDLDDKGCAPAEQORASPLTSIVAVVGLL 663
 DB 599 IMGENNTL-VMKYADANNVCHLCHANCYTGACGPGLOQCEVWPSGPKPISPTATGVGGL 657
 QY 664 VVVLGVWFGI-LIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRILKETELRK 722
 DB 658 FIVV-VALGIGLPMRRHIVKRTLRLLQERLEVEPLTPSGEAPNQAHRLILKETEPK 716
 QY 723 VKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPV 782
 DB 717 IKVLGSGAFGVYKGLWIPGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHV 776
 QY 783 SRLIGILCTSTVQLTQMPYCLLDHYRNRGRGLSGQDLLNWCQIAKNSYLDVRLV 842
 DB 777 CRLIGILCTSTVQLTQMPYCLLDYVREHKDNIGSYQLLNCVQIAGMNYLDBRRLV 836
 QY 843 HRDLAARNVKS PNHVKITDPLGLARLLIDIDETEHADGKVKPIKWMALLESILRRFTHQ 902
 DB 837 HRDLAARNVLTVPQHVKITDPLGLAKLGAEEKHYAEGGKVPKWMALLESILHRIYTHQ 896
 QY 903 SDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPICTIDVYIMVMKWMID 962
 DB 897 SDVWSYGVTVWELMTFGSKPYDGIIPASDISSILEKGERLPQPICTIDVYIMVMKWMID 956
 QY 963 SECRPRFELVSEFSEMRARDQFVVIO-NEDLGPASPLDSTFYFSLLEDGMDLVDAAE 1021
 DB 957 ADSRPFKEILIEFSGMARDQRYLIVQDERMHLPSPTDSNFYALMEDEMDVVDAD 1016
 QY 1022 EYLVPPQQFFPCDPAPGAGGMVHRHSSTSGGGDLTLGLEPSEEAAPRSPAPSEGA 1081
 DB 1017 EYLVPPQQFF-----NSPST-----SRTELLSSLSA 1042
 QY 1082 GSDVFDGLGMAAGKLOSLPHTDPSLQRYSEDTVPLPSET--DGYVAPLTCSPQPY 1139
 DB 1043 TSN---NSTVACINRNGSCRVKEDAFQRYSSDPTGAVTEDNIDDAFL-----PVPEY 1092
 QY 1140 VNQPDVVRPQPPSPREGPLPAARPAAGATLERAKTSPGKNGVVKDVFAGGAVENPEYL-T 1198
 DB 1093 VNO-SVFKRPAGSVQNPVTHNQPLHP-----APGRDLHYQN--PHSNVGNPEYLN 1141
 QY 1199 PGCGAAPQHPFPAPFSPADNLYYWDQ-----DP-----PERGAPSTFKGPT 1242
 DB 1142 AQ-----FTCLSSGFSPALWIKGSHQMSLDNPDYQQDFPKPKGIFKG-PT 1191
 QY 1243 AENPEYLGLDVP 1254
 DB 1192 AENAEYLRVAPP 1203

A;Accession: A27720
A;Molecule type: mRNA
A;Residues: 1-1223 <LAX>
A;Cross-references: UNIPROT:P00534; GB:M20386
R;Nilsen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, M. Cell 41, 719-726, 1985
A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and p185
A;Reference number: A00643; MUID:85228222; PMID:2988784
A;Accession: A00643
A;Molecule type: mRNA
A;Residues: 585-1223 <NLL>
A;Cross-references: GB:M10066
C;Genetics:
A;Gene: erbB
A;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: alternative splicing; ATP; autophosphorylation; glycoprotein; growth factor specific protein kinase
F;1-30/Domain: signal sequence #status predicted <SIG>
F;31-1223/Product: epidermal growth factor receptor #status predicted <MAT>
F;31-654/Domain: extracellular #status predicted <EXT>
F;81-307/Domain: EGF receptor extracellular domain repeat <E1>
F;397-610/Domain: EGF receptor extracellular domain repeat <E2>
F;655-677/Domain: transmembrane #status predicted <TM>
F;678-1223/Domain: intracellular #status predicted <INT>
F;719-984/Domain: protein kinase homology <KIN>
F;727-735/Region: protein kinase ATP-binding motif
F;136,202,280,361,370,422,575,580,615,635/Binding site: carbohydrate (Thr) (covalent) #
F;192,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;754/Active site: Lys #status predicted
F;1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #status predicted

Query Match 45.9%; Score 3123.5; DB 1; Length 1223;
Best Local Similarity 48.7%; Pred. No. 1.le-122; Indels 145; Gaps 25;
Matches 632; Conservative 175; Mismatches 345;

Qy 8 RWGLLLALLPPGAA-----STVCTGTDMLKRLPASPETHDMLRLHYGCGVQVQGNLE 61
Db 13 RGAVALVLLLLGVALCSAVEKKVCGQTNKKLTQLGHVEDFTSLQRMVYNCVVLNLE 72
Qy 62 LTYLPTNASLSFLDIOEVOGYVLIANNQVRQVPLQLRLVRGQLPFDNYVALVLDNGD 121
Db 73 ITVEHRDLTFLKTIQEVAGYVLIANNVQVPLPLENLQIRGNVLYDNSPALAVLSNYH 132
Qy 122 PLANTTPTVTGSPGLRELQLRSITLKGVLIRNPOLCYQDTILWKDIFHKNQNAL 181
Db 133 -MNTQ-----GLRELPMKRLSEILNGVKISNNPKLNMPTVLWNDIIDSRLK-PL 182
Qy 182 TLID-TNRSRACHPCSPMCKGSRGWGSSSDCQSLTRTVCAAGCA-RCKGPLPTDCCHEQ 239
Db 183 TVLDFASNLSSCPKCHPNCETHCWGAGEQNCQTLTKVICAQCSGRCRGKVPSCCHNQ 242
Qy 240 CAAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPGRYTFGASCVTAC 299
Db 243 CAAGCTGPRSDCLACRFRDADATCKDTCPLVLYNPTYQMDVNPBGKYSFGATCVREC 302
Qy 300 PYNVLTDSVCSCLVPLHQVETAEQTCRCKSPCARVCYGLGWEHLREVRATSA 359
Db 303 PHNTVTDHSGSVRSCNMTDYEV-EENGVRCKKCDGLCKVCNGIGIGELKGLSLNAT 361
Qy 360 NIOBFAGCKTIFGSLAFIPESFDGDPASNTAPLOEQVLPETLEEITGVLYISAWPDSL 419
Db 362 NIDSFKNCTKINGDVSLPVAFLGDAFTKTLPLDPKLDVFTVKEISGELLIQAWFDNA 421
Qy 420 PDLVSFQNLQVIRGRIHLNGAYSUTLQGLGISWGLRSLRGLSGLALIHNTLCFVHT 479
Db 422 TDLYAFENLEIRTKRQHGQYSLAVNLKIQSLGLSLKLEISDGDALIMKNKNCVADT 481
Qy 480 VPMDLFRNPHQALLHTANRPEDECVGEGLACHOLCARGHCWGPGTQCVCNCSQPLRQE 539
Db 482 MNMRSLFATOSQKTKYITONRNKNDCTADRHVCDPLSDVGCWGGPFPCHCFRFFSROKE 541
Qy 540 CVERCRVLQGLPREYVYVNAHCLPCHPECPQNG---SVTCFPGPEADQCVAHYKDPFPC 596

Db 542 CVQCNILQGEPRFERDSKCLPCHSECLVQNSTAYNTTCSGPGPDHCKMAHFIDGPHC 601
Qy 597 VARCPGSKVDPDLSYMPFWKPDDEGACQPCPINCTHSCVDLDDKGCFAEQBASPLTSIVS 656
Db 602 VKACPAVGLGENDTL-VMKYADANAVCQLCHPCTRGCKPGLEGCP---NGSKTPSIAA 657
Qy 657 AVY-GILLVVVLGVVFGILLIKRQOKRKVTMRLLQETELVBLPTPSGAMPNQAORIL 715
Db 658 GVVGGLLCLVVGLGLGLYLRRL-HIVRKTLRLQLRELRLVBLPTPSGAPNQAHRIL 716
Qy 716 KETELRKVKYLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYMA 775
Db 717 KETEFKVKVKGSGAGTGVYKGLWIPBEKVKIPVAIKELREATSPKANKEILDEAYMA 776
Qy 776 GVCSPYVSRLLGLCLTSTVOLVTQLMYPYGLLDHVRNRRGLSGQDLLNWCMTAKMSY 835
Db 777 SVDNPHVCRLLGLCLTSTVOLITQLMYPYGLLDYIREHKDNIQSQYLLNMCVQIAKMNY 836
Qy 836 LEDVRLVHRDLAARNVLKSPNVKITDFGLARLLDIDETEHADGKVPKWMALSESIL 895
Db 837 LEERLVHRDLAARNVLVKTPOHVKITDFGLAKLGNDEKEYHAEKGKVPKWMALSESIL 896
Qy 896 RRRFTHQSDVMSYGVTVWELMTFCAPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIM 955
Db 897 HRIYTHQSDVMSYGVTVWELMTFCGSKPYDGIPIASEISSVLEKGERLPQPPICTIDVYIM 956
Qy 956 VKCMWIDSECRPRELVSFMRMDPQRFVVIQ-NEDLGPASPLDSTFYRSLLEDDDM 1014
Db 957 VKCMWIDADSRKPRELIAEFKWARDPPRYLVIOGDERMHLPSPTDSKPYRTLMEBEDM 1016
Qy 1015 GDVDAEYLVPOGFFCPDPAFGAGGMVHRHRSSTRSGGDLTLGLSPSEEAARSP 1074
Db 1017 EDIVDAEYLVPHQGF-----NSPST-----SRTP 1042
Qy 1075 L-----APSEGAGSDVFDGLMGAAKGLQSLPHTDPSPLQRYSEDPTVPLPSET--DGY 1127
Db 1043 LLSLSLATSNNNSATCID-----RNGQGHVREDSPVQYSSDPTGNFLEBSIDGDF 1094
Qy 1128 VAPLTCSPQEVYQDVRPQPPSPREGPLPAARPAAGATLERAKTLSPGKGVVQVDF-- 1185
Db 1095 L-----PAPEYVQ--LMPKPS-----TAMVQNIYNNISLT 1125
Qy 1186 -----AFGAVENPEYLTPOGGAAQPQHPPPAFSPAFDNLVYWDQ----- 1225
Db 1126 AISKLPWDSRYQNSHSTAVDNPEYL-----NTQSPKLVTFVSSPIWISQGNHQN 1177
Qy 1226 -DPPE-----RGAPPSTFKGTPTAENPEYLGLDVP 1254
Db 1178 LDNPDYQDPLPNETKPNGLLKVPAAENPEYLRVAAP 1214

RESULT 7

A47253

epidermal growth factor receptor, HER4 - human

C;Species: Homo sapiens (man)

C;Date: 22-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004

C;Accession: A47253

R;Plowman, G.D.; Culouscou, J.M.; Whitney, G.S.; Green, J.M.; Carlton, G.W.; Foy, L.; N

Proc. Natl. Acad. Sci. U.S.A. 90, 1746-1750, 1993

A;Title: Ligand-specific activation of HER4/p180erbB4, a fourth member of the epidermal

A;Reference number: A47253; MUID:93189574; PMID:8383326

A;Accession: A47253

A;Status: preliminary; not compared with conceptual translation

A;Molecule type: nucleic acid

A;Residues: 1-1308 <PLO>

A;Cross-references: UNIPROT:Q15303; GB:L07868; NCBI:G337359; PIDN:AAB59446.1; PID:G33736

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; growth factor receptor

F;716-981/Domain: protein kinase homology <KIN>

F;724-732/Region: protein kinase ATP-binding motif

Db 123 YQK-NPSSP--DVTQVGLKQLQNLTEILLGGVGVKSHNPLLCNVETINWMDIVDKTSNP 179
QY 180 ALTLDITNRSRACHPCSPMCKGSCWGESSESDCSLTQRTVCAGC-ARCKGPLPTDCCH 238
Db 180 TMLNLI PHAFERQCKQKDHGCVNGSCWAPGPHGCKQFTKLCACQCNRRCRGPRFIDCNE 239
QY 239 QCAAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTA 298
Db 240 HCAGGCTGPRATDCLACRDFNDGCTCKDTPPKIYDIVSHQVVDNENIKYTFGAACVKE 299
QY 299 CPVNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTS 358
Db 300 CPSNVVTE-GACVRSAGMLEVD-ENGRKSRCKPCDGVCPKVCGIGIGLSNNTIAVNS 357
QY 359 ANIQEAGCKKIFGSLAFLESFGDQDPASNTAPLOEQLOVFETLEBITGYLYISAWPDS 418
Db 358 TNIRSFNCTKINGDIILNRNSFGDPHYKIGTMDPEHLNLTIVKSEITGYLYIMWWPEN 417
QY 419 LPDLSVFQNLQVIRGRILHNGAYS-LTLQGLIGISWLGLSLRLSGLALIHNNHLCFV 477
Db 418 MTSLSVFQNLLEIRGRTTFGRGFSFVVQVRHLQWLGLSLKEVSAGNVILKNTLQLRYA 477
QY 478 HTVPWDOLFNPQALLHTANRPEDECVEGLACHQICARGHCWGPPTQCVNCSQFLRG 537
Db 478 NTINWRRLFRSEDOQSIYDART-----ENQTCNNECEDGCW-PGPTMCVSLHVDRG 529
QY 538 QECVECKVLQGLPREVYNARHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPVC 597
Db 530 GRCVASNLQGEPEAQQVRCQCHQEBCLVQDTSUTCYGGPANCKSAHFQDGGQCI 589
QY 598 ARCPGSGVKPDLSPYMIWKFDEEGACQPCPINCSTHSCVDLDDKCPAERASPLTSTVSA 657
Db 590 PRCPHGILGDGDTL-IWKYADKMGQCPQCHQCTQCGSGPGLSCRGD-IVSHSLAVGL 647
QY 658 VVGLLVVGLVGFGLIKRQKIRKYMRLLOETELVELPELTPSGMNPQAMRLIKE 717
Db 648 VSGLLITVIVALLLWLLRRRIK-RKRTIRCLLQEXELVELPTPSQAPNQAFLRLIKE 706
QY 718 TELRKVKVLGSGAFGTGVIWIPDGENVKIPVAKVLRNTSPKANKEILDAIYVAGV 777
Db 707 TEPKQKRVLGSAGFTVYKGLWNPDGENIIPVAKVLRATSPKVNQEVLDIAIYVAGV 766
QY 778 GSPVSRLLGLCTSTVOLVQLMPYGLCLLDHVRNRLGSGDQLLNCMQIAKMSYLE 837
Db 767 DHPHVCRLGLCTSAVOLVQLMPYGLCLLDYVRHQERICGQWLLNWCQIAKMNYLE 826
QY 838 DVLRLVHRDLARNVLKSPHVKITDFGLARLLDIDETEHADGGKVPKIKWMALESILRR 897
Db 827 ERLVHRDLARNVLLKNPNHVKITDFGLSKLLTADEKEYQADGGKVPKIKWMALESILQ 886
QY 898 RPTHQSDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPICTIDVYIMTVK 957
Db 887 TYTHQSDVWSYGVTVWELMTFGSPYDGIIPAKETASVLENGERLPQPICTIEVYIILK 946
QY 958 CWMIDSECRPRFRELVSFSEARMARDPQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDMDGL 1017
Db 947 CWMIDPSRRFRRELVEFSEOMARDPSYLVIQG---NLPSLSDRLFSRLSSDD--DV 1001
QY 1018 VDAEYLVPQOQFPCPDPAAGAGWVHRHRSSTRSGGGDLTLGLEPSEEEAPRSLAP 1077
Db 1002 VDAEYLVPYKRI-----NRQGS-----BPCIP 1024
QY 1078 SEGAGSDVFDGLMGAAKGLQSLPHTDPSPLQRYSEDPTV-PLPSETDGVVAPLTCSPQ 1136
Db 1025 PTGH-----PVRENSITURNISDPTONALEKDLOGH----- 1055
QY 1137 PEYVQPDVVRPQ-----PSPRE-----GPLP-AARPAGATLERAKTILSPGKNGVVKD 1183
Db 1056 -EYVNPQSETSRSLSDIYNPNYEDLTDGWPVSLSSQEAETNFSPEYLTNTQNSL--- 1111
QY 1184 VFAPGGAVENPEYLTPOGGAAPQHPPPAFSPADNLYYWDQPPERGAAPPSTFKGPTTA 1243
Db 1112 PLVSSGSMDDPDY---QAG-----YQAAF-----LPQTGAULTGNGMFLPAA 1149

QY 1244 ENPEYLG 1250
Db 1150 ENLEYLG 1156

RESULT 9

A36223
C:Species: Homo sapiens (man)
C:Date: 04-Oct-1991 #sequence_revision 13-Jan-1993 #text_change 09-Jul-2004
C:Accession: A36223; I59164
R:Kraus, M.H.; Ising, W.; Miki, T.; Popescu, N.C.; Aaronson, S.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A:Title: Isolation and characterization of ERB3, a third member of the ERBB/epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3) (EC 2.7.1.1-) precursor - human
A:Reference number: A36223; MUID:90083234; PMID:2687875
A:Accession: A36223
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-1342 <KRA>
A:Cross-references: UNIPROT:P21860; GB:M29366
R:Plowman, G.D.; Whitney, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, V.L.; Todaro, G.J.
Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4909, 1990
A:Title: Molecular cloning and expression of another epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3), a third member of the ERBB/epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3) (EC 2.7.1.1-) precursor - human
A:Reference number: I59164; MUID:90311312; PMID:2164210
A:Accession: I59164
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-559, 'G', 561-957, 'F', 959-1063, 'G', 1065-1342 <RES>
A:Cross-references: GB:M34309; NID:g183990; PIDN:AAA35979.1; PID:g306841
C:Genetics:
A:Gene: GDB:ERBB3; HER3
A:Cross-references: GDB:119880; OMIM:190151
A:Map position: 12q13-12q13
C:Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homolog
C:Keywords: ATP; phosphotransferase
F:707-972/Domain: protein kinase homology <KIN>
F:715-723/Region: protein kinase ATP-binding motif
Query Match 35.7%; Score 2431.5; DB 2; Length 1342;
Best Local Similarity 40.7%; Pred. No. 6.8e-94;
Matches 533; Conservative 191; Mismatches 458; Indels 129; Gaps 32;
QY 10 GLLALLPPGAA--STQVCTGTDMLRPLASPETHLMLRHLVYGGCVVQGNLELTLYPT 67
Db 11 GLLFSLARGEVNSQAVCEPTLNGLSVTDGAENQVTLKLYRCEVVMGNLEIVLTGH 70
QY 68 NASLSFLQDIQEVQGVLYIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTT 127
Db 71 NADLSFLQWIREVTGVYLVAMNEFSTLPLNLRVVRGTQVYVDGKFAIFVM----LNYNT 125
QY 128 PVTGASPGGLRELQRLSLTEILKGVLIQRNPOLCVQDTTLKWDIIFHNNQLALTLDTN 187
Db 126 ----NSSHALRQLRLQLTEILSGVYIEKNDKLCMDTIDMRDIDVRDRD---AEIVVKD 178
QY 188 RSRACHPCSPMCKGSCWGESSEDCSLTRTVCCAGC-ARCKGPLPTDCCHEOCACGCTG 246
Db 179 NGRSCPPEHVECKG-RWGPGESEDCQTLTKTIICAPQCNCHCFGNPNQCCHDECAGCSCG 237
QY 247 PKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVYACPYNYLST 306
Db 238 PQDITDCAFRRFNDGACVPRCPQPLVYNKLTQLFENPHTKYQYGGCVASCNPFV-V 296
QY 307 DVGSCITLVCPHLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTSANIQEFAG 366
Db 297 DQTSQVACPPDKWEVD-KNGLKWCPCGGLCPKACEGTGSG--SRFQTVDSNIDGFVN 353
QY 367 CKKIFGSLAFLESFGDQDPASNTAPLOEQLOVFETLEBITGYLYISAWPDSPLDLSVQ 426
Db 354 CTKILGNLFLITGLNGDPMHKIPALDPEKLVFRVITGYLTGYNLQSWPPHMFNSVFS 413
QY 427 NQVIRGRILHNGAYS-LTLQGLIGISWLGLSLRLSGLALIHNNHLCFVHTVPMVDQL 485

Db 414 NLTTIGRSLYNRGFSLLIMKNLVNTSLGPRSLKEISAGRIYISANRQLCYHSHLNWTKV 473
 QY 486 FRNPHQALLHTA-NRDECEVGEGLACHOLCARGCHGWGPGTQVNCSPFLRQOEVCESC 544
 Db 474 LRGPTEERLDIKHNRPRDCVAEGKVCDFLCSGGCGWPGPGQGLSCRNYSRGVGVCTHC 533
 QY 545 RVUQLGLPREYVVARHCLPCHPEQOPQNGSVTCFPEADOCVACHYKDPFPCVARCPGV 604
 Db 534 NFLNGEPREFAHAEFCFCHPEQOPMEGTATNGSGSDTCAQCAHFRDPCHVCSSCPHV 593
 QY 605 KPDLSYMPYIKWFPDEBAGACQPCPINCTHSCVDLDDKGCFAEQRRA-----SPLTSIYSAVVG 660
 Db 594 LG--AKGPIYKYPDVQNECRPCHENCTQCGKGPBELQCLGQTLVLIGKTHLTWALTVIAG 651
 QY 661 ILLVVLGVVFGILLIKRQOKIR-KYMERLLOETELVEPLTPSGAMPNQAQMRILKETE 719
 Db 652 --LWVIFMLGLGTFYWRGRRIONKRAMRYLERGESIBPLDPS-EKANKVLARIPKETE 708
 QY 720 LRKVKVLGSGAFQVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAVVMAGVGS 779
 Db 709 LRKLKVLGSGVFTGVHGVWIPGESIKIPVCIKVIEDKSGRQSPQAVTDHMLAIGSLDH 768
 QY 780 PYVSRLLIGCLTSTVOLTLQMLPYGCLLDHVRNRLGSGODLLNNCMQIAKMSYLEDV 839
 Db 769 AHIVRLGLGCPGSSQLQVTOYLPLGSLLDHVRQHRGALGPQLLLNNGVQIAKGMVYLEBH 828
 QY 840 RLIVHRLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVKPIKMALESILRRFP 899
 Db 829 GMVHRNLAARNVLKSPQVADFGVADLLPPDDKQLLYSEAKTPIKMALESIHFGKY 888
 QY 900 THOSDVMSYGVTVWELMTFGAKYDGIIPAREIPDLEKGERLPOPPICITDVYMIWVKW 959
 Db 889 THOSDVMSYGVTVWELMTFGAEYAGRLAEVDPDLLEKGERLAQPOICITDVYMWVKW 948
 QY 960 MIDSECRPRELVSFBSRMARDPQRFVVIQNEDELGPA---SPLDSTFYRSLLDDMDGD 1016
 Db 949 MIDENIRPTEKELANEFTRMARDPPRYLVIKRES-GFGIAPGDEPHGLTWKKEVELEP 1007
 QY 1017 LVDABEVLVPOQFFCPDPAPGAGGVHHRSSSTRSGGGDLTLGLEP-SBEEAPRSL 1075
 Db 1008 ELDLDDLEABED-----NLATTTIGSALSPLVGTINRPRGQSLL 1048
 QY 1076 APSEGAGSDVFDGLGMAAGLQSLPTHDP-SPLQRYSEDPTVPLP-----SETDGYV 1128
 Db 1049 SPSSGY-MPMNQNLGSCSDESASVSGSERCPVSLH-----PMPRGCLASESGHV 1101
 QY 1129 A-----PLTCSPOPE-----YVNPQDVRPQPPSPREGP-----L 1157
 Db 1102 TGSEAELOEKVSMCRSRSRSPRGRDSAYHSQRHSLTTPVTPLSPPGLEEDVNGVYM 1161
 QY 1158 PAARPAGATLERAKTILSP-CKNGVV-----KDVFAFGGAVENPEYLTPOGGNAPOPHDP 1210
 Db 1162 PDTHLKGTPSSREGTLLSSVGLGTEEBED-----EBEYNNRRRRHSP-PHPP 1212
 QY 1211 PAFSPAFDNLVYWD-----QDPPERGAPPSTFKGTPTAENPEYL 1249
 Db 1213 RPSLSLEELGYEYMDVGSDDLASLGSTQSCPLHPVPIMPAGITPDEDEYEM 1263

RESULT 10
 JC4387
 epidermal growth factor receptor homolog precursor - rat
 N/Alternate names: ErbB3 protein; HER3 protein
 C/Species: Rattus norvegicus (Norway rat)
 C/Date: 17-Jan-1996 #sequence_revision 19-Apr-1996 #text_change 16-Aug-2004
 C/Accession: JC4387
 R/Hellyer, N.J.; Kim, H.H.; Greaves, C.H.; Sierke, S.L.; Koland, J.G.
 Gene 165, 279-284, 1995
 A/Title: Cloning of the rat ErbB3 cDNA and characterization of the recombinant protein.
 A/Reference number: JC4387; MUID:96096535; PMID:8521290
 A/Accession: JC4387
 A/Molecule type: mRNA
 A/Residues: 1-1339 <HEL>

A/Cross-references: GB:U29339; MID:g915389; PID:g915390
 A/Experimental source: liver
 A/Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue 370. This protein is a functional heregulin receptor that transduces signals to c.
 C/Genetics:
 A:Gene: ErbB3
 C:Superfamily: protein kinase homology
 C:Keywords: ATP; growth factor receptor; liver; phosphoprotein; transmembrane protein
 F:1-1339/Domain: signal sequence #status predicted <SIG>
 F:20-1339/Product: epidermal growth factor homolog #status predicted <MAT>
 F:640-659/Domain: transmembrane #status predicted <TM>
 F:705-970/Domain: protein kinase homology <KIN>
 F:713-721/Region: protein kinase ATP-binding motif
 F:939,1051,1156,1194,1196,1219,1257,1259,1273,1286,1325/Binding site: phosphate (TYR)
 Query Match 34.4%; Score 2346.5; DB 2; Length 1339;
 Best Local Similarity 40.8%; Pred. No. 2.3e-90;
 Matches 523; Conservative 171; Mismatches 434; Indels 155; Gaps 34;
 QY 3 LAALCRWGLLLALLPPGAA---STOVCTCTDMKRLRASPETHLDMLRHLXGCVVQGN 59
 Db 7 LQVLC-----FLLSLARGSEMNGNSQAVCPGTNLGLSVTGDADNQYQTLKLYEKCEVVMGN 62
 QY 60 LELTYLPTNASLSFLQDIOEVQYVLIAHNQVRQVPLQRLRIVRGRTQFLFEDNYALAVLDN 119
 Db 63 LEIVLTGHNADLSFLQWIREVTAYVLVAMNEFSLPLNLRVVRGTQVYDGFKAIFVM-- 120
 QY 120 GDPLANNTPVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDTILWKDIFHKNQOL 179
 Db 121 ---LNYNT---NSSHALRQLAFTQLTEILSGSVYIEKNDKLCHMDTIDRDIRVR-- 170
 QY 180 ALTLDTNRSRACHPCSPMKGRCWGESSEDCQSILRTVCAGGC-ARCKGLPTDCCHE 238
 Db 171 GAELVVKANGANCPCHEVCKG-RWGPDPDCCQLITKIIICAPQNGRCFGNPNQCCHD 229
 QY 239 QCAAGCTGPKHSDCLACLHFNHSG:CELCPCALVATYNTDTFSPMPNPEGRYTFGASCVTA 298
 Db 230 ECAGCGSGPDQDTCFACRRFNDSGACVPRCPPLVYKLTFOLEPNPHTKYQYGVGVVAS 289
 QY 299 CPYNYLSTDVSGCTIVCLPHNQEVTAEDGTQRCCKSPCARVCYGLGHEHLREVRVTS 358
 Db 290 CPHNFV-VDTQFCVRACPPDKMEVD-KHGLKMCPCGGLCPKACGCTGSG--SRVQTVD 345
 QY 359 ANIQFAGCKITFGSLAFPEFSDGDPASNTAPLOEQLOVPEETLEEITGYLYISAWPDS 418
 Db 346 SNIDFVNCITKLGNDLFLITGLNVDPWHKIIPALDPEKLVNVRTVREITGYLNIQSWPH 405
 QY 419 LPDLSVFNQLQVIRGILHNGAYS-LTLQGLGISWGLRSLRSLRELGLALIHHTHLCFV 477
 Db 406 MHNFSVFNLTITIGRSLYNRGFSLLIMKNLVNTSLGPRSLKEISAGRVYISANQQLCYH 465
 QY 478 HTVPWDQLFRNPHQALLHTA-NRDECEVGEGLACHOLCARGCHGWGPGTQVNCSPFLR 536
 Db 466 HSLNWTLLRGPSEERLDIKYDRPLGECLAEKVKDPLCSCGGCGWPAFGQCLSCRNYSR 525
 QY 537 GQCEVEECRVLOGLPREYVVARHCLPCHPEQOPQNGSVTCFPEADOCVACHYKDPFPC 596
 Db 526 EGVCTHCHNLFQEBEPREFVHEAQCFCHPECLPMEGTSTYNGSGSDACARCAHFRDPHC 585
 QY 597 VARCPGSGVKPDLSSYMPIWKFPDEBAGACQPCPINCTHSC--VLDLDDKGPAAQRASPLTSI 654
 Db 586 VNSCPHGILG--AKGPIYKYPDQAEQNECRPCHENCTQCGNGPELQCLGQAEVLMSPHLV 643
 QY 655 VSAVGVILLVVLGVVFGILLIKRQOKIR-KYMERLLOETELVEPLTPSGAMPNQAQMR 713
 Db 644 IAVTVG--LAVITMLIGSGFLYWRGRRIONKRAMRYLERGESIBPLDPS-EKANKVLAR 700
 QY 714 ILKETELRKVKVLGSGAFQVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAVV 773
 Db 701 IFKETELRKVKVLGSGVFTGVHGVWIPGESIKIPVCIKVIEDKSGRQSPQAVTDHMLA 760
 QY 774 MAGVGSPPYVSRLLIGCLTSTVOLTLQMLPYGCLLDHVRNRLGSGODLLNNCMQIAKGM 833

Db 715 QYTAIGPY-----CRASPPRSKITANLD-----VNMIFIITGAVLVPTIC 755
QY 669 VFGI-LIKRROOKIRYV--MRLLQETELVPLTPSGAMPNOAOWRIILKETELRKVKV 725
Db 756 ILCVVYICQKQAKKETVMTWALSGRDSPLPSNTGANLCKRIRIVDAELRKG 815
QY 726 LGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPVYSL 785
Db 816 LGMGAFGRVYKGVWVPEGENVKIPVAIKELKSTGABSSSEFLREAYIMASEBHVNLKL 875
QY 786 LGICLSTVQLVTLMPYGCILDHVRNRRGLSGDILLNMCQIAKMSYLEVDRLVHRD 845
Db 876 LAVCMSSQMLITQLMPLGLCLDYVRNRDKIGSKALLNWSQIAKMSYLEBKRILVHRD 935
QY 846 LAARNVLVK--SPNHVKITDFGLARLLDDEYHADGKVPDKMALESILRRRTHQ 902
Db 936 LAARNVLRLLAGEDH----DFGLKLLSSDSNEYKAAGKMPDKMALECIINRVFTSK 991
QY 903 SDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPTICTIDVYMIWVKWIMID 962
Db 992 SDVWAFGVTTWELLTFQORHENIPAKDIPLDLEVGLKLEPQLCSLDIYCTLLSCHWLD 1051
QY 963 SECRPRELVSFERSMARDPQRFVQIONEDLG--PASPLDSTFYRSLLEDD---DMGDL 1017
Db 1052 AAMRPTFKQLTVFAEPARDPGRYLAITLGDKFTRLPA-----YTSQDEKDLIRKLAPT 1104
QY 1018 VDAEYLVPOQGFPCPPAPGAGGVHHRSSSTRSGGDLTLGLEPSEBAP----- 1071
Db 1105 TDGSEAIATKPDYLOPKAALGPS-----HRTDCT-----DEMFKLNRYC 1143
QY 1072 RSLAPSEAGAGSDVFDG---DLGMAAKGLQLSLTPHDPQLQRYSEDPVPLPSETDGYV 1128
Db 1144 KPSNKNSSGDDERDSAREVGUNLR-----LDLPVDEDDYL 1182
QY 1129 APITCSPQRYVNPQDVROPQPPREGPLPAAPAGATLRAKTLSPGKNGVVKDVFAFG 1188
Db 1183 MP-TCQPGPNNNNMN-----NPNQNNMAAVGVAAGYM-----DLIGVP 1220
QY 1189 GAVENPEYL---TPOGAAPQPH-----PPAPFSP-AFONLYIWD 1224
Db 1221 VSDNPEYLLNAQTLGVGSEPIPTQTIGIPVWGPGTMEVKVPMPSGSEPTSSDHEYND 1279

RESULT 14

S35745

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian erythroblastosis virus

C;Species: avian erythroblastosis virus

C;Date: 03-Mar-1994 #sequence_revision 26-May-1995 #text_change 09-Jul-2004

C;Accession: S35745

R;Vennstrom, B.

submitted to the EMBL Data Library, March 1993

A;Reference number: S35743

A;Accession: S35745

A;Molecule type: DNA

A;Residues: 1-544 <VEN>

A;Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X12707

C;Genetics:

A;Gene: erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific p

F;135-400/Domain: protein kinase homology <KIN>

F;143-151/Region: protein kinase ATP-binding motif

F;170/Active site: Lys #status predicted

Query Match 24.2%; Score 1647; DB 2; Length 544;

Best Local Similarity 54.9%; Pred. No. 1.1e-61;

Matches 345; Conservative 70; Mismatches 121; Indels 92; Gaps 15;

QY 578 GPEADQCVACAHYKDPFPCVACPSGVKPDLSYMPIWKFDEGACQPCPINCTHSCVDL 637

Db 1 GP--DHCMKCAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCQLCHPNCCTRGCKGP 57

QY 638 DDGCPAEQASPLTSIVSAVW--GILLVVVLGVVFGILIKRROOKIRKYTMRLLOETEL 696
Db 58 GLEGCP-NGSKTPIAAGVVGGLCLVAVVGLIGLYLRRR-HIVKRKTLRRLLOREL 113
QY 697 VEPLTSGAMPNOAOWRIILKETELRKVKVLSGAFGVYKGIWIPDGENVKIPVAIKVLR 756
Db 114 VEPLTSGEAPNOAHRIILKETEFKVKVGLGFGAFGVYKGLWIPGEKVTIIPVAIKELR 173
QY 757 ENTSKANKEILDEAYVMAGVSPVYRLLIGLICLTSTVQLVTLQMPYGCILLDHVRNRR 816
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGLICLTSTVQLITQIMPYGCILLDYIREHKDN 233
QY 817 LGSQDLLNMCQIAKMSYLEVDRLVHRDLAARNVLVSPNHVKITDFGLARLLDDETE 876
Db 234 IGSQYLLNWCQIAKMSYLEERHVMVRDLAARNVLVKTQHVKITDFGLAKQLGADEKE 293
QY 877 YHADGKVPDKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLE 936
Db 294 YHAEGGKVPDKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPYDGIPIAREISVLE 353
QY 937 KGERLPQPTICTIDVYMIWVKWIMIDSECRPRELVSFERSMARDPQRFVQI-NEDLG 995
Db 354 KGERLPQPTICTIDVYMIWVKWIMIDADSRKPRELAEFSKWARDPRRLVITQGDREMH 413
QY 996 PASPLDSTFYRSLLEDDMGDLVDAEYLVPOQGFPCPPAPGAGGVHHRSSSTRSG 1055
Db 414 LPSPTDSKVFRTLMESEDMEDIVDAEYLVPHQGF-----NSPST--- 454
QY 1056 GGDLTGLPSEBAPRSL-----APSEGAGSDVFDGDLGMAAKGLQLSLTPHDPSPQLQ 1110
Db 455 -----SRTPLLSLSATSNATNCIDRNGG-----H----- 481
QY 1111 RYSEDPVPLPSETDGYVAPLTCSPQRYVNPQDVROPQPPREGPLPAAPAGAT-LER 1169
Db 482 -----PVREDGFL-----PAPEYVQ--LMPKRESTMVQNIYVYISLTAISK 523
QY 1170 AKTLPSPGKNGVVKDVFAFGGAVENPEYL 1197
Db 524 LPIDSRVQN-----SHSTAVDNPEYL 544

RESULT 15

S00727

kinase-related transforming protein (erbB) (EC 2.7.1.1-) - avian erythroblastosis virus

C;Species: avian erythroblastosis virus

C;Date: 01-Dec-1989 #sequence_revision 01-Dec-1989 #text_change 09-Jul-2004

C;Accession: S00727

R;Scotting, P.; Vennstrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.

Oncogene Res. 1, 265-278, 1987

A;Title: Common site of mutation in the erbB gene of avian erythroblastosis virus mutan

A;Reference number: S00727; MUID:88217326; PMID:2897102

A;Accession: S00727

A;Molecule type: DNA

A;Residues: 1-545 <SCO>

A;Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X06943

C;Genetics:

A;Gene: erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; phosphotransferase

F;135-400/Domain: protein kinase homology <KIN>

F;143-151/Region: protein kinase ATP-binding motif

Query Match 24.1%; Score 1640; DB 2; Length 545;

Best Local Similarity 54.9%; Pred. No. 2.1e-61;

Matches 345; Conservative 69; Mismatches 122; Indels 92; Gaps 15;

QY 578 GPEADQCVACAHYKDPFPCVACPSGVKPDLSYMPIWKFDEGACQPCPINCTHSCVDL 637

Db 1 GP--DHCMKCAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCQLCHPNCCTRGCKGP 57

QY 638 DDGCPAEQASPLTSIVSAVW--GILLVVVLGVVFGILIKRROOKIRKYTMRLLOETEL 696

Db 58 GLEGCP-NGSKTPIAAGVVGGLCLVAVVGLIGLYLRRR-HIVKRKTLRRLLOREL 113

QY 697 VEELTSGAMPNOAOMRILKETELRKVKVLGSGAFGVYKGIWIPGENVKIPVAIKVL 756 -
Db 114 VEELTSGEAPNOAHLRIILKETEFKKVKVLGFGAFGVYKGLWIPEGEKVTIPVAIKEL 173
QY 757 ENTSPKANKEILDEAYVMAGVSPYVSRLLIGICLTSTVOLVTOLMPYGCLLDHHVRENRR 816
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGICLTSTVQIITOLMPYGCLLDYIREHKN 233
QY 817 LGSQDLLNMCWQIAKMSYLEEDVRLVHRDLAARNVLKSPNHVKIITDFGLARLLDIDETE 876
Db 234 IGSQYLLNMCVQIAKGMNLEERHLVHRDLAARNVLKTPQDVKITDFGLAKQLGADEKE 293
QY 877 YHADGGKVPWKMALESILRRRTHOSDVSYSYVTVWELMTFGAKDYDGIPIAREIPDLLE 936
Db 294 YHAEGGKVPWKMALESILHRIYTHOSDVSYSYVTVWELMTFGSKPYDGIPIASEISSVLE 353
QY 937 KGERLPQPPICITIDVTYMIWVKMIDSECRPRPRELVSEFSRMDPQRFVVIQ-NEDLG 995
Db 354 KGERLPQPPICITIDVTYMIWVKWMSDADSRPKRELIAEFKWARDPPRYLVIQDERMH 413
QY 996 PASPLDSTYRSLLEDDMGDLVDAEEYLVPOGGFFCPDPAPGAGGMVHHRSSSTRSG 1055
Db 414 LPSPTDSKFYRILMEEDMEDI VDADEYLVPHQGF-----NSPST--- 454
QY 1056 GGDLTGLPSPBEEAPRSP-----APSEGAGSDVFDGLGMGAAGLQSLPTHDPSP 1110
Db 455 -----SRTPLLSLSATSNNSATNCIDRNG-----H----- 481
QY 1111 RYSEDTVPLPSETDGYVAPLTCPOPEYVNOVDVFPQPPSPREGPLPAARPAGAT-LER 1169
Db 482 -----PVREDGFL-----PAPEYVNO--LMPKPESTAMVQNIYVYISLTAISK 523
QY 1170 AKTLPCKNGVVKDVFAFGAVENPEYL 1197
Db 524 LPMDSRYQN-----SHSTAVDNPEYL 544

Search completed: January 25, 2005, 21:30:29
Job time : 44.8376 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:09 ; Search time 12.9167 Seconds
(without alignments)
111.736 Million cell updates/sec

Title: US-09-806-703A-12

Perfect score: 74

Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79: *
1: pir1: *
2: pir2: *
3: pir3: *
4: pir4: *

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	1315	1 BTCLTN	tentoxilysin (EC 3
2	44.5	60.1	244	2 S29982	class II histocomp
3	44	59.5	66	2 S31029	gene 84 protein -
4	43	58.1	180	2 G86826	diamine N-acetyltr
5	43	58.1	899	2 T42976	hypothetical prote
6	42.5	57.4	1060	2 S06286	major merozoite su
7	42.5	57.4	1086	2 S16752	major merozoite su
8	42.5	57.4	1701	2 A26868	major merozoite su
9	42.5	57.4	1701	2 A54498	major merozoite su
10	42.5	57.4	1726	1 SAZQGM	major merozoite su
11	42.5	57.4	1726	2 A45948	major merozoite su
12	42	56.8	1333	2 S38635	blastopora polyprot
13	41	55.4	123	2 G48677	Ig heavy chain V-D
14	41	55.4	447	2 H97146	siderophore/Surfac
15	41	55.4	899	2 C36812	hypothetical prote
16	40.5	54.7	245	2 S29980	class II histocomp
17	40	54.1	79	2 D95794	hypothetical prote
18	40	54.1	194	2 G64026	(acyl-carrier-prot
19	40	54.1	601	1 A55485	oligopeptidase (EC
20	40	54.1	601	2 C86840	oligopeptidase
21	40	54.1	644	2 S46746	hypothetical prote
22	39	52.7	102	2 PH1491	Ig heavy chain V r
23	39	52.7	119	2 PH1518	Ig heavy chain V r
24	39	52.7	119	2 PH1516	Ig heavy chain V r
25	39	52.7	119	2 PH1519	Ig heavy chain V r
26	39	52.7	123	2 F48677	Ig heavy chain V-D
27	39	52.7	135	2 PH1494	Ig heavy chain V r
28	39	52.7	140	2 PH1488	Ig heavy chain V r
29	39	52.7	189	2 G97978	conserved hypothet

30	39	52.7	213	1 KIYMC	adenylate kinase (
31	39	52.7	326	2 B71808	type II restrictio
32	39	52.7	349	2 T43043	probable acetyl-Co
33	39	52.7	423	2 F64890	type IIS restricti
34	39	52.7	505	2 C90569	hypothetical prote
35	38	51.4	188	2 A64639	hypothetical prote
36	38	51.4	188	2 H71875	hypothetical prote
37	38	51.4	256	2 F64472	hypothetical prote
38	38	51.4	287	2 F70361	tRNA-pseudouridine
39	38	51.4	381	2 F71196	probable hexosyltr
40	38	51.4	383	2 T51466	hypothetical prote
41	38	51.4	424	2 T29127	hypothetical prote
42	38	51.4	501	2 T52135	cellulase (EC 3.2.
43	38	51.4	501	2 A86158	endo-1,4-beta gluc
44	38	51.4	561	2 E82395	methyl-accepting c
45	38	51.4	572	1 HNN280	hemagglutinin-neur

ALIGNMENTS

RESULT 1

BTCLTN

tentoxilysin (EC 3.4.24.68) precursor - Clostridium tetani

N;Alternate names: tetanus neurotoxin

C;Species: Clostridium tetani

C;Date: 31-Mar-1988 #sequence revision 31-Mar-1988 #text change 09-Jul-2004

C;Accession: A25689; A25757; A25194; B25194; A60759; S69348; S09364

R;Eisel, U.; Jarausch, W.; Goretzki, K.; Henschen, A.; Engels, J.; Weller, U.; Hudel, M.

EMBO J. 5, 2495-2502, 1986

A;Title: Tetanus toxin: primary structure, expression in E. coli, and homology with bot

A;Reference number: A25689; MUID:87053814; PMID:3536478

A;Accession: A25689

A;Molecule type: DNA

A;Residues: 1-1315 <EIS>

A;Cross-references: UNIPROT:P04958; GB:X04436; NID:g40769; PIDN:CAA28033.1; PID:g40770

R;Fairweather, N.F.; Lyness, V.A.

Nucleic Acids Res. 14, 7809-7812, 1986

A;Title: The complete nucleotide sequence of tetanus toxin.

A;Reference number: A25757; MUID:87040747; PMID:3774547

A;Accession: A25757

A;Molecule type: DNA

A;Residues: 1-1315 <PAI>

A;Cross-references: GB:X06214; NID:g40773; PIDN:CAA29564.1; PID:g40774

R;Experimental source: strain CN3911

R;Fairweather, N.F.; Lyness, V.A.; Pickard, D.J.; Allen, G.; Thomson, R.O.

J. Bacteriol. 165, 21-27, 1986

A;Title: Cloning, nucleotide sequencing, and expression of tetanus toxin fragment C in

A;Reference number: A25194; MUID:86085672; PMID:3510187

A;Accession: A25194

A;Molecule type: DNA

A;Residues: 743-1315 <PA2>

A;Cross-references: GB:M12739; NID:g144920; PIDN:AAA23282.1; PID:g144921

A;Accession: B25194

A;Molecule type: protein

A;Residues: 865-894 <PA3>

R;Matsuda, M.; Iai, D.L.; Sugimoto, N.; Ozutsumi, K.; Okabe, T.

Infect. Immun. 57, 3588-3593, 1989

A;Title: Isolation, purification, and characterization of fragment B, the NH-2-terminal

A;Reference number: A60759; MUID:90035436; PMID:2478476

A;Accession: A60759

A;Molecule type: protein

A;Residues: 461-475 <MAT>

R;Demotz, S.; Lanzavecchia, L.; Eisel, U.; Niemann, H.; Widmann, C.; Corradin, G.

J. Immunol. 142, 394-405, 1989

A;Title: Delineation of several DR-restricted tetanus toxin T cell epitopes.

A;Reference number: JS0098; MUID:8903918; PMID:2463305

A;Contents: annotation; epitope region

R;Schiavo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B

Nature 359, 832-835, 1992

A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteoly

A;Reference number: S27125; MUID:93063293; PMID:1331807

A;Contents: annotation

A;Cross-references: UNIPROT:Q05301; EMBL:Z18946; NID:q15859; PIDN:CAA79460.1; PID:e59702

S06286

major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (std
 N;Alternate names: 190K protein; polymorphic schizont antigen
 C;Species: Plasmodium falciparum
 C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 09-Jun-2000
 C;Accession: S06286
 R;Certa, U.; Rotmann, D.; Matile, H.; Reber-Liske, R.
 EMBO J. 6, 4137-4142, 1987
 A;Title: A naturally occurring gene encoding the major surface antigen precursor p190 of
 A;Reference number: S06286; MUID:88166657; PMID:3327688
 A;Accession: S06286
 A;Status: not compared with conceptual translation
 A;Molecule type: DNA
 A;Residues: 1-1060 <CER>
 C;Superfamily: major merozoite surface antigen
 C;Keywords: surface antigen

Query Match 57.4%; Score 42.5; DB 2; Length 1060;
 Best Local Similarity 60.0%; Pred. No. 19;
 Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

QY 1 QYIKANSKFI-GITE 14

||:|||||:|:|

Db 983 QFVKNSKVTGLTE 997

RESULT 7

S16752
 major merozoite surface antigen MSA-1 - malaria parasite (Plasmodium falciparum) (fragme
 N;Alternate names: polymorphic schizont antigen p190
 C;Species: Plasmodium falciparum
 C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 09-Jul-2004
 C;Accession: S16752
 R;Olafsson, P.; Matile, H.; Certa, U.
 Exp. Parasitol. 74, 381-389, 1992
 A;Title: Plasmodium falciparum: the repetitive MSA-1 surface protein of the RO-71 isolat
 A;Reference number: A44865; MUID:92275047; PMID:1592091
 A;Accession: A44865
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-1086 <OLA>
 A;Cross-references: UNIPROT:Q25961; EMBL:X61930
 A;Experimental source: isolate RO-71
 C;Genetics:
 A;Gene: MSA1
 C;Superfamily: major merozoite surface antigen
 C;Keywords: glycoprotein; merozoite; surface antigen; tandem repeat

Query Match 57.4%; Score 42.5; DB 2; Length 1086;
 Best Local Similarity 60.0%; Pred. No. 20;
 Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

QY 1 QYIKANSKFI-GITE 14

||:|||||:|:|

Db 1009 QFVKNSKVTGLTE 1023

RESULT 8

A26868
 major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (std
 C;Species: Plasmodium falciparum
 C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jun-2000
 C;Accession: A26868
 R;Tanabe, K.; Mackay, M.; Goman, M.; Scaife, J.G.
 J. Mol. Biol. 195, 273-287, 1987
 A;Title: Allelic dimorphism in a surface antigen gene of the malaria parasite Plasmodium
 A;Reference number: A26868; MUID:88011243; PMID:3079521
 A;Accession: A26868
 A;Molecule type: DNA
 A;Residues: 1-1701 <TAN>
 C;Superfamily: major merozoite surface antigen
 C;Keywords: surface antigen

F;1-19/Domain: signal sequence #status predicted <SIG>

F;20-1701/Product: major merozoite surface antigen #status predicted <MAT>
 Query Match 57.4%; Score 42.5; DB 2; Length 1701;
 Best Local Similarity 60.0%; Pred. No. 31;
 Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

QY 1 QYIKANSKFI-GITE 14

||:|||||:|:|

Db 1001 QFVKNSKVTGLTE 1015

RESULT 9

A54498
 major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (std
 C;Species: Plasmodium falciparum
 C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 09-Jul-2004
 C;Accession: A54498
 R;Peterson, M.G.; Coppel, R.L.; McIntyre, P.; Langford, C.J.; Woodrow, G.; Brown, G.V.;
 Mol. Biochem. Parasitol. 27, 291-302, 1988
 A;Title: Variation in the precursor to the major merozoite surface antigens of Plasmodium
 A;Reference number: A54498; MUID:88142999; PMID:2449612
 A;Accession: A54498
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-1701 <PET>
 A;Cross-references: UNIPROT:P13819; GB:M19143; NID:gi60412; PIDN:AAA29653.1; PID:gi6041
 C;Superfamily: major merozoite surface antigen
 C;Keywords: surface antigen

Query Match 57.4%; Score 42.5; DB 2; Length 1701;
 Best Local Similarity 60.0%; Pred. No. 31;
 Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

QY 1 QYIKANSKFI-GITE 14

||:|||||:|:|

Db 1001 QFVKNSKVTGLTE 1015

RESULT 10

SAZQGM
 major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (std
 N;Alternate names: 195K glycoprotein
 C;Species: Plasmodium falciparum
 C;Date: 30-Sep-1987 #sequence_revision 31-Mar-1991 #text_change 09-Jul-2004
 C;Accession: A23386; S06361
 R;Weber, J.L.; Leininger, W.M.; Lyon, J.A.
 Nucleic Acids Res. 14, 3311-3323, 1986
 A;Title: Variation in the gene encoding a major merozoite surface antigen of the human
 A;Reference number: A23386; MUID:86205236; PMID:3517809
 A;Accession: A23386
 A;Molecule type: DNA
 A;Residues: 1-1104 <WEB1>
 A;Cross-references: UNIPROT:P04934; EMBL:X03831
 R;Weber, J.L.; Sim, B.K.L.; Lyon, J.A.; Wolff, R.
 Nucleic Acids Res. 16, 1206, 1988
 A;Title: Merozoite surface protein sequence from the Camp strain of the human malaria pa
 A;Reference number: S06361; MUID:88143999; PMID:3278296
 A;Accession: S06361
 A;Molecule type: DNA
 A;Residues: 1104-1726 <WEB2>
 A;Cross-references: EMBL:X03831
 C;Comment: The merozoite stages of different strains have strain-specific surface antigen
 C;Comment: P. falciparum has three stages: sporozoite, merozoite, and gametocyte. The m
 C;Superfamily: major merozoite surface antigen
 C;Keywords: glycoprotein; merozoite; surface antigen; tandem repeat
 F;1-19/Domain: signal sequence #status predicted <SIG>
 F;20-1726/Product: major merozoite surface antigen #status predicted <MAT>
 F;67-87, 91-96, 100-105, 109-120/Region: 3-residue repeats (S-G-T)
 F;757-765/Region: 3-residue repeats (T-E-E)
 F;133,272,501,567,638,827,839,924,944,990,1016,1114,1221,1613,1658/Binding site: carbohy

Query Match 57.4%; Score 42.5; DB 1; Length 1726;
 Best Local Similarity 60.0%; Pred. No. 32;

Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;
QY 1 QYIKANSKFI-GITE 14
Db 1026 QFVKSNSKVIITGLTE 1040

RESULT 11
A45948
major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (st
C;Species: Plasmodium falciparum
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 09-Jul-2004
C;Accession: A45948
R;Chang, S.P.; Kramer, K.J.; Yamaga, K.M.; Kato, A.; Case, S.E.; Siddiqui, W.A.
Exp. Parasitol. 67, 1-11, 1988
A;Title: Plasmodium falciparum: gene structure and hydropathy profile of the major merozo
A;Reference number: A45948; MUID:89005525; PMID:3049134
A;Accession: A45948
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1726 <CHA>
A;Cross-references: UNIPROT:Q25922; GB:M37213
C;Superfamily: major merozoite surface antigen
C;Keywords: surface antigen

Query Match. 57.4%; Score 42.5; DB 2; Length 1726;
Best Local Similarity 60.0%; Pred. No. 32;
Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;
QY 1 QYIKANSKFI-GITE 14
Db 1026 QFVKSNSKVIITGLTE 1040

RESULT 12
S38635
blastopia polyprotein - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: S38635
R;Frommer, G.; Schuh, R.; Jdckle, H.
submitted to the EMBL Data Library, November 1993
A;Description: Localized expression of a novel microplasia-like element in the blastoderm o
A;Reference number: S38635
A;Accession: S38635
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1333 <FRO>
A;Cross-references: UNIPROT:Q24262; EMBL:Z27119; NID:9415797; PID:9415798
C;Genetics:
A;Gene: FlyBase:micropia
A;Cross-references: FlyBase:FBgn0014947
C;Keywords: polyprotein

Query Match 56.8%; Score 42; DB 2; Length 1333;
Best Local Similarity 53.3%; Pred. No. 30;
Matches 8; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
QY 1 QYIKANSKFI-GITE 15
Db 127 KYVQARSKMIGSAEL 141

RESULT 13
G48677
Ig heavy chain V-D-J region (419.1) - mouse (fragment)
C;Species: Mus musculus (house mouse)
C;Date: 19-May-1994 #sequence_revision 19-May-1994 #text_change 17-Mar-1999
C;Accession: G48677
R;Tasignon, J.; Brait, M.; Jamila, I.; Urbain, J.; Gottlieb, P.; Brown, A.; Haseemann, C
Proc. Natl. Acad. Sci. U.S.A. 90, 9508-9512, 1993
A;Title: Molecular characterization of monoclonal CRI-A-positive anti-arsonate antibodies
A;Reference number: A48677; MUID:94022404; PMID:8415731

A;Accession: G48677
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-123 <TAS>
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: heterotrimer; immunoglobulin
F;15-98/Domain: immunoglobulin homology <IMW>

Query Match 55.4%; Score 41; DB 2; Length 123;
Best Local Similarity 64.3%; Pred. No. 3.9;
Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;
QY 2 YIKANSKFI-GITE 15
Db 57 YIKYNEKPKGTTTL 70

RESULT 14
H97146
siderophore/surfactin synthetase related protein [imported] - Clostridium acetobutylicu
C;Species: Clostridium acetobutylicum
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 09-Jul-2004
C;Accession: H97146
R;Nolling, J.; Bretton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Cl
A;Reference number: A96900; MUID:21359325; PMID:21359325
A;Accession: H97146
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-447 <KUR>
A;Cross-references: UNIPROT:Q97HK7; GB:AE001437; PIDN:AAK79963.1; PID:GI5024986; GSPDB:4
A;Experimental source: Clostridium acetobutylicum ATCC824
C;Genetics:
A;Gene: CAC2004

Query Match 55.4%; Score 41; DB 2; Length 447;
Best Local Similarity 63.6%; Pred. No. 15;
Matches 7; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 QYIKANSKFI-GITE 11
Db 291 KYIRTNKKFIG 301

RESULT 15
G36812
hypothetical protein ORF63 - saimirine herpesvirus 1 (strain 11)
C;Species: saimirine herpesvirus 1
A;Note: host Saimiri sciureus (common squirrel monkey)
C;Date: 16-Oct-1992 #sequence_revision 16-Oct-1992 #text_change 08-Oct-1999
C;Accession: G36812
R;Albrecht, J.
submitted to the EMBL Data Library, January 1992
A;Description: Primary structure of the herpesvirus saimiri genome.
A;Reference number: A36806
A;Accession: G36812
A;Molecule type: DNA
A;Residues: 1-899 <ALB>
A;Cross-references: GB:X64346; NID:960320; PIDN:CAA45686.1; PID:G60384
R;Albrecht, J.C.; Nicholas, J.; Biller, D.; Cameron, K.R.; Biesinger, B.; Newman, C.; W
J. Virol. 66, 5047-5058, 1992
A;Title: Primary structure of the herpesvirus saimiri genome.
A;Reference number: A37309; MUID:92333688; PMID:1321287
A;Contents: annotation; protein-coding frames
A;Note: neither protein nor nucleotide sequence is given
C;Genetics:
A;Gene: 63

Query Match 55.4%; Score 41; DB 2; Length 899;
Best Local Similarity 50.0%; Pred. No. 31;
Matches 7; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITE 14
|||:|:|:|:
Db 124 QYITSNATFFGLSE 137

RESULT 16

S29980
class II histocompatibility antigen - Atlantic salmon
C;Species: Salmo salar (Atlantic salmon)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: S29980
R;Hordvik, I.

submitted to the EMBL Data Library, October 1992

A;Reference number: S29980
A;Accession: S29980
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-245 <HOR>
A;Cross-references: UNIPROT:Q31591; EMBL:X70167; NID:g64371; PID:g64372
C;Superfamily: class II histocompatibility antigen; immunoglobulin homology

Query Match 54.7%; Score 40.5; DB 2; Length 245;
Best Local Similarity 44.4%; Pred. No. 9.9;
Matches 8; Conservative 5; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS--KFIGITEL 15
|||:|:|:|:
Db 53 EYVRFNSTGVKGYGYTEL 70

RESULT 17

D85794
hypothetical protein Z2873 [imported] - Escherichia coli (strain O157:H7, substrain EDL958)
C;Species: Escherichia coli
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: D85794
R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; Mayhew
Miller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Potamousis, K.; Apodaca,
Nature 409, 529-533, 2001
A;Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.
A;Reference number: A85480; MUID:21074935; PMID:11206551

A;Accession: D85794
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-79 <STO>
A;Cross-references: UNIPROT:Q8X4G6; GB:AE005174; NID:gl2515873; PIDN:AAG56816.1; GSPDB:G
A;Experimental source: strain O157:H7, substrain EDL933
C;Genetics:
A;Gene: Z2873

Query Match 54.1%; Score 40; DB 2; Length 79;
Best Local Similarity 50.0%; Pred. No. 3.8;
Matches 7; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITE 14
|||:|:|:|:
Db 52 QYLUKSGFLGID 65

RESULT 18

G64026
acyl-carrier-protein phosphodiesterase (EC 3.1.4.14) H11366 - Haemophilus influenzae
N;Alternate names: conserved hypothetical protein H11366
C;Species: Haemophilus influenzae
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004
C;Accession: G64026
R;Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, A
; Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, J
; D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghegan, N.S.M.
Science 269, 496-512, 1995
A;Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter,
A;Title: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd.

A;Reference number: A64000; MUID:95350630; PMID:7542800
A;Accession: G64026
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-194 <TIGR>
A;Cross-references: UNIPROT:P43013; GB:U32816; GB:L42023; NID:gl574193; PIDN:AAC23013.1
A;Experimental source: strain Rd KW20

C;Function:

A;Description: catalyzes hydrolysis of the phosphopantetheine residue from holo-acyl-ca
C;Superfamily: acyl carrier protein phosphodiesterase
C;Keywords: phosphoric diester hydrolase

Query Match 54.1%; Score 40; DB 2; Length 194;
Best Local Similarity 53.3%; Pred. No. 9.7;
Matches 8; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
|||:|:|:|:
Db 147 QYMKSLGFIGITDV 161

RESULT 19

A55485
oligopeptidase (EC 3.4.24.-) pepF [validated] - Lactococcus lactis
N;Alternate names: metalloendopeptidase
C;Species: Lactococcus lactis
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
C;Accession: A55485; S49150
R;Monnet, V.; Nardi, M.; Chopin, A.; Chopin, M.C.; Gripon, J.C.
J. Biol. Chem. 269, 32070-32076, 1994
A;Title: Biochemical and genetic characterization of PepF, an oligopeptidase from Lacto
A;Reference number: A55485; MUID:95096044; PMID:7798200

A;Accession: A55485

A;Status: preliminary; translated from GB/EMBL/DBJ

A;Molecule type: DNA

A;Residues: 1-601 <RES>

A;Cross-references: UNIPROT:P54124; EMBL:Z32522; NID:g510139; PIDN:CAA83534.1; PID:G510

C;Genetics:

A;Gene: pepF

C;Function:

A;Description: EC 3.4.24.-; oligopeptidase [validated, MUID:95096044]; hydrolyzes pepti

C;Superfamily: oligoendopeptidase F

C;Keywords: hydrolase; metalloproteinase

Query Match 54.1%; Score 40; DB 1; Length 601;
Best Local Similarity 46.7%; Pred. No. 31;
Matches 7; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
|||:|:|:|:
Db 284 RYIELRKILGITDL 298

RESULT 20

G86840
oligoendopeptidase F [imported] - Lactococcus lactis subsp. lactis (strain IL1403)
C;Species: Lactococcus lactis subsp. lactis
C;Date: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 09-Jul-2004
C;Accession: G86840
R;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarre, K.; Weissenbach, J.; Ehrh
Genome Res. 11, 731-753, 2001

A;Title: The complete genome sequence of the lactic acid bacterium Lactococcus lactis s

A;Reference number: A86625; MUID:21235186; PMID:11337471

A;Accession: G86840

A;Status: preliminary

A;Molecule type: DNA

A;Residues: 1-601 <STO>

A;Cross-references: UNIPROT:O9CEV7; GB:AE005176; PID:gl2724746; PIDN:AAK05825.1; GSPDB:

A;Experimental source: strain IL1403

C;Genetics:

A;Gene: pepF

C;Superfamily: oligoendopeptidase F

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Query Match          54.1%; Score 40; DB 2; Length 601;
Best Local Similarity 46.7%; Pred. No. 31;
Matches 7; Conservative 4; Mismatches 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 284 RYIELRKKILGITDL 298

RESULT 21
S46746
hypothetical protein YHR039c - yeast (Saccharomyces cerevisiae)
N:Alternate names: hypothetical protein H8179.19
C:Species: Saccharomyces cerevisiae
C:Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 09-Jul-2004
C:Accession: S46746
R;Du, Z.
submitted to the EMBL Data Library, May 1994
A:Description: The sequence of S. cerevisiae cosmid 8179.
A:Reference number: S46732
A:Accession: S46746
A:Molecule type: DNA
A:Residues: 1-644 <DUZ>
A:Cross-references: UNIPROT:P38694; EMBL:U00062; PID:g488162; GSPDB:GN00008
C:Genetics:
A:Gene: SGD:MSC7; MIPS:YHR039c
A:Cross-references: SGB:S0001081
A:Map position: 8R
C:Superfamily: NAD-dependent aldehyde dehydrogenase

Query Match          54.1%; Score 40; DB 2; Length 644;
Best Local Similarity 60.0%; Pred. No. 33;
Matches 9; Conservative 1; Mismatches 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 38 QIIQDNQKLIGITTL 52

RESULT 22
PHI491
Ig heavy chain V region (clone XR26-3) - mouse (fragment)
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
C:Accession: PHI491
R;Giusti, A.M.; Manser, T.
J. Exp. Med. 177, 797-809, 1993
A:Title: Hypermutation is observed only in antibody H chain V region transgenes that have
d for somatic mutation.
A:Reference number: PHI482; MUID:93171820; PMID:8436910
A:Accession: PHI491
A>Status: translation not shown
A:Molecule type: mRNA
A:Residues: 1-102 <GIU>
A:Experimental source: hybridoma cell
C:Superfamily: immunoglobulin V region; immunoglobulin homology
C:Keywords: heterotetramer; immunoglobulin

Query Match          52.7%; Score 39; DB 2; Length 102;
Best Local Similarity 64.3%; Pred. No. 7.6;
Matches 9; Conservative 0; Mismatches 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
Db 38 YIKYNEKFKGKTTL 51

RESULT 23
PHI518
Ig heavy chain V region (clone X41-21) - mouse (fragment)
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
C:Accession: PHI518

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R;Giusti, A.M.; Manser, T.
J. Exp. Med. 177, 797-809, 1993
A:Title: Hypermutation is observed only in antibody H chain V region transgenes that have
d for somatic mutation.
A:Reference number: PHI482; MUID:93171820; PMID:8436910
A:Accession: PHI518
A>Status: translation not shown
A:Molecule type: DNA
A:Residues: 1-119 <GIU>
A:Experimental source: hybridoma cell
C:Genetics:
A:Introns: 3/1
C:Superfamily: immunoglobulin V region; immunoglobulin homology
C:Keywords: heterotetramer; immunoglobulin
F:21-104/Domain: immunoglobulin homology <IMM>

Query Match          52.7%; Score 39; DB 2; Length 119;
Best Local Similarity 64.3%; Pred. No. 8.9;
Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
Db 63 YIKYNEKFKGKTTL 76

RESULT 24
PHI516
Ig heavy chain V region (clone X41-4) - mouse (fragment)
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
C:Accession: PHI516
R;Giusti, A.M.; Manser, T.
J. Exp. Med. 177, 797-809, 1993
A:Title: Hypermutation is observed only in antibody H chain V region transgenes that have
d for somatic mutation.
A:Reference number: PHI482; MUID:93171820; PMID:8436910
A:Accession: PHI516
A>Status: translation not shown
A:Molecule type: DNA
A:Residues: 1-119 <GIU>
A:Experimental source: hybridoma cell
C:Genetics:
A:Introns: 3/1
C:Superfamily: immunoglobulin V region; immunoglobulin homology
C:Keywords: heterotetramer; immunoglobulin
F:21-104/Domain: immunoglobulin homology <IMM>

Query Match          52.7%; Score 39; DB 2; Length 119;
Best Local Similarity 64.3%; Pred. No. 8.9;
Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
Db 63 YIKYNEKFKGKTTL 76

RESULT 25
PHI519
Ig heavy chain V region (clone X41-29) - mouse (fragment)
C:Species: Mus musculus (house mouse)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
C:Accession: PHI519
R;Giusti, A.M.; Manser, T.
J. Exp. Med. 177, 797-809, 1993
A:Title: Hypermutation is observed only in antibody H chain V region transgenes that have
d for somatic mutation.
A:Reference number: PHI482; MUID:93171820; PMID:8436910
A:Accession: PHI519
A>Status: translation not shown
A:Molecule type: DNA
A:Residues: 1-119 <GIU>
A:Experimental source: hybridoma cell
C:Genetics:

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A;Introns: 3/1
 C;Superfamily: immunoglobulin V region; immunoglobulin homology
 C;Keywords: heterotetramer; immunoglobulin
 F;21-104/Domain: immunoglobulin homology <IMM>

Query Match 52.7%; Score 39; DB 2; Length 119;
 Best Local Similarity 64.3%; Pred. No. 8.9;
 Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
 ||| ||| ||| |||
 Db 63 YIKYNEKFKKTTIL 76

Search completed: January 25, 2005, 06:09:22
 Job time : 23.9167 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:08 ; Search time 49.5833 Seconds
(without alignments)
174.063 Million cell updates/sec

Title: US-09-806-703A-12
Perfect score: 74
Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Uniprot_02.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	1310	2 Q93N27	Q93N27 clostridium
2	74	100.0	1314	1 TETX_CLOTE	P04958 clostridium
3	46	62.2	447	2 Q7V0H3	Q7V0H3 candidatus
4	46	62.2	890	1 SYA_ENTFA	Q835J8 entrococcus
5	44.5	60.1	60	2 Q31585	Q31585 salmo salar
6	44.5	60.1	71	2 Q9XRJ9	Q9XRJ9 salvelinus
7	44.5	60.1	85	2 Q95HY1	Q95HY1 salmo salar
8	44.5	60.1	85	2 Q95IS2	Q95IS2 salmo salar
9	44.5	60.1	86	2 Q95HX4	Q95HX4 salmo salar
10	44.5	60.1	244	2 Q31590	Q31590 salmo salar
11	44	59.5	66	1 VG84_BPML5	Q05301 mycobacteri
12	44	59.5	546	2 Q9XG37	Q9XG37 guillardia
13	43.5	58.8	67	2 Q31578	Q31578 salmo salar
14	43	58.1	180	2 Q9CF66	Q9CF66 lactococcus
15	43	58.1	250	2 Q9MCL7	Q9MCL7 streptococ
16	43	58.1	252	2 Q9XJE8	Q9XJE8 lactococcus
17	43	58.1	291	2 Q9CRV4	Q9CRV4 mus musculu
18	43	58.1	304	2 Q8K2A1	Q8K2A1 mus musculu
19	43	58.1	309	2 Q9CYD2	Q9CYD2 mus musculu
20	43	58.1	361	2 Q6LHK1	Q6LHK1 photobacter
21	43	58.1	361	2 CAG23229	CAG23229 photobact
22	43	58.1	394	2 Q6LJK0	Q6LJK0 photobacter
23	43	58.1	394	2 CAG22530	CAG22530 photobact
24	43	58.1	395	2 Q6LGL2	Q6LGL2 photobacter
25	43	58.1	395	2 Q6LGN3	Q6LGN3 photobacter
26	43	58.1	395	2 Q6LGN3	Q6LGN3 photobacter
27	43	58.1	395	2 CAG23341	CAG23341 photobact
28	43	58.1	395	2 CAG23547	CAG23547 photobact
29	43	58.1	395	2 CAG23557	CAG23557 photobact
30	43	58.1	395	2 CAG23568	CAG23568 photobact
31	43	58.1	407	2 Q6LGM1	Q6LGM1 photobacter

32	43	58.1	407	2 Q6LID6	Q6LID6 photobacter
33	43	58.1	407	2 Q6LV51	Q6LV51 photobacter
34	43	58.1	407	2 CAG18824	CAG18824 photobact
35	43	58.1	407	2 CAG22944	CAG22944 photobact
36	43	58.1	407	2 CAG23559	CAG23559 photobact
37	43	58.1	572	2 Q8H8F3	Q8H8F3 oryza sativ
38	43	58.1	899	2 Q9YTK4	Q9YTK4 ateline her
39	42.5	57.4	1087	2 Q25961	Q25961 plasmodium
40	42.5	57.4	1682	1 MSP1_PLAF3	P19598 plasmodium
41	42.5	57.4	1688	2 Q764K9	Q764K9 plasmodium
42	42.5	57.4	1688	2 Q764L0	Q764L0 plasmodium
43	42.5	57.4	1688	2 BAD08401	BAD08401 plasmodiu
44	42.5	57.4	1688	2 BAD08402	BAD08402 plasmodiu
45	42.5	57.4	1689	2 Q764K8	Q764K8 plasmodium

ALIGNMENTS

RESULT 1
Q93N27 PRELIMINARY; PRT; 1310 AA.
AC Q93N27;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Tetanus toxin (Fragment).
OS Clostridium tetani.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1513;
RN [1]
RP SEQUENCE FROM N.A.
RA Shumin Z., Dianliang L.;
RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF389424; AAK72964.2; -
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR Pfam; PF01742; Peptidase M27; I.
DR PRINTS; PR00760; BONTOTOXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
FT NON_TER 1 1310
SQ SEQUENCE 1310 AA; 150316 MW; 9EADDC914418E450 CRC64;

Query Match 100.0%; Score 74; DB 2; Length 1310;
Best Local Similarity 100.0%; Pred. No. 0.00021;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 831 QYIKANSKFIGITEL 845

RESULT 2
TETX_CLOTE STANDARD; PRT; 1314 AA.
AC P04958;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Tetanus toxin precursor [EC 3.4.24.68] (Tentoxylisin) (Contains:
DE Tetanus toxin light chain (Tetanus toxin chain L); Tetanus toxin heavy
DE chain (Tetanus toxin chain H)).
GN Name=tetX; OrderedLocusNames=ctp60;
OS Clostridium tetani.

OG Plasmid pE88, and plasmid 75 Kbp.
 OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
 OC Clostridium.
 OX NCBI_TaxID=1513;
 RN (1)
 RN SEQUENCE FROM N.A.
 RC PLASMID=75 Kbp; PubMed=3536478;
 RX MEDLINE=87053814; PubMed=3536478;
 RA Eisel U., Jarausch W., Goretzki K., Henschen A., Engels J., Weller U.,
 HUDEL M., Habermann E., Niemann H.;
 RA "Tetanus toxin: primary structure, expression in E. coli, and homology
 RT with botulinum toxins.";
 RL EMBO J. 5:2495-2502(1986).
 RN (2)
 RN SEQUENCE FROM N.A.
 RC STRAIN=CN3911; PLASMID=75 Kbp;
 RX MEDLINE=87040747; PubMed=3774547;
 RA Fairweather N.F., Lyness V.A.;
 RT "The complete nucleotide sequence of tetanus toxin.";
 RL Nucleic Acids Res. 14:7809-7812(1986).
 RN (3)
 RN SEQUENCE FROM N.A.
 RC STRAIN=Massachusetts / E88; PLASMID=pE88;
 RX MEDLINE=22457253; PubMed=12552129; DOI=10.1073/pnas.0335853100;
 RA Brueggemann H., Baumer S., Fricke W.F., Wierzer A., Liesegang H.,
 RA Decker I., Herzberg C., Martinez-Arias R., Merkl R., Henne A.,
 RA Gottschalk G.;
 RT "The genome sequence of Clostridium tetani, the causative agent of
 RT tetanus disease.";
 RL Proc. Natl. Acad. Sci. U.S.A. 100:1316-1321(2003).
 RN (4)
 RN SEQUENCE OF 742-1314 FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=86085672; PubMed=3510187;
 RA Fairweather N.F., Lyness V.A., Pickard D.J., Allen G., Thomson R.O.;
 RT "Cloning, nucleotide sequencing, and expression of tetanus toxin
 RT fragment C in Escherichia coli.";
 RL J. Bacteriol. 165:21-27(1986).
 RN (5)
 RN PARTIAL SEQUENCE, AND DISULFIDE BONDS.
 RX MEDLINE=90201034; PubMed=2108021;
 RA Krieglstein K., Henschen A., Weller U., Habermann E.;
 RT "Arrangement of disulfide bridges and positions of sulfhydryl groups
 RT in tetanus toxin.";
 RL Eur. J. Biochem. 188:39-45(1990).
 RN (6)
 RN PARTIAL SEQUENCE.
 RX MEDLINE=92037649; PubMed=1935979;
 RA Krieglstein K.G., Henschen A.H., Weller U., Habermann E.;
 RT "Limited proteolysis of tetanus toxin. Relation to activity and
 RT identification of cleavage sites.";
 RL Eur. J. Biochem. 202:41-51(1991).
 RN (7)
 RN IDENTIFICATION AS ZINC-PROTEASE.
 RX MEDLINE=93010948; PubMed=1396558;
 RA Schiavo G., Poulain B., Rossetto O., Benfenati F., Tauc L.,
 RA Montecucco C.;
 RT "Tetanus toxin is a zinc protein and its inhibition of
 RT neurotransmitter release and protease activity depend on zinc.";
 RL EMBO J. 11:3577-3583(1992).
 RN (8)
 RN IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poulain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 RT proteolytic cleavage of synaptobrevin.";
 RL Nature 359:832-835(1992).
 RN (9)
 RN X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF 874-1314.
 RX MEDLINE=97475217; PubMed=9334741;
 RA Umland T.C., Wingert L.M., Swaminathan S., Furey W.F., Schmidt J.J.,
 RA Sax M.;

RT "Structure of the receptor binding fragment HC of tetanus
 RT neurotoxin.";
 RL Nat. Struct. Biol. 4:788-792(1997).
 CC -!- FUNCTION: Tetanus toxin acts by inhibiting neurotransmitter
 CC release. It binds to peripheral neuronal synapses, is internalized
 CC and moves by retrograde transport up the axon into the spinal cord
 CC where it can move between postsynaptic and presynaptic neurons. It
 CC inhibits neurotransmitter release by acting as a zinc
 CC endopeptidase that catalyzes the hydrolysis of the 76-Gln-Phe-77
 CC bond of synaptobrevin-2.
 CC -!- CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-Phe-77 bond in
 CC synaptobrevin 2.
 CC -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -!- SUBUNIT: The precursor polypeptide is subsequently cleaved to
 CC yield subchains L and H. These remain linked by a disulfide bridge
 CC and are non-toxic after separation.
 CC -!- MISCELLANEOUS: The C-terminus of the heavy chain binds to
 CC ganglioside receptors.
 CC -!- SIMILARITY: Belongs to peptidase family M27.
 CC
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 CC
 CC EMBL; X04436; CAA28033.1; -;
 CC EMBL; X06214; CAA29564.1; -;
 CC EMBL; AF528097; AAO37454.1; -;
 CC EMBL; M12739; AAM23282.1; -;
 CC FIR; A25689; BTCLTN.
 CC PDB; 1A8D; X-ray; @=863-1314.
 CC PDB; 1AF9; X-ray; @=863-1314.
 CC PDB; 1D0H; X-ray; A=846-1314.
 CC PDB; 1DFQ; X-ray; A=871-1314.
 CC PDB; 1DIW; X-ray; A=874-1314.
 CC PDB; 1DLL; X-ray; A=874-1314.
 CC PDB; 1FV2; X-ray; A=843-1314.
 CC PDB; 1FV3; X-ray; A/B=843-1314.
 CC MEROPS; M27.001; -;
 CC InterPro; IPR008985; ConA like lec_gl.
 CC InterPro; IPR011065; Kunitz-like
 CC InterPro; IPR000395; Peptidase_M27.
 CC InterPro; IPR006025; Pept_M_Zn_BS.
 CC Pfam; PF01742; Peptidase_M27; 1.
 CC PRINTS; PR00760; BONTOTOXILYSIN.
 CC ProDom; PD001963; Bontotoxylisin; 1.
 CC PROSITE; PS00142; ZINC_PROTEASE; 1.
 CC 3D-structure; Complete_proteome; Direct protein sequencing; Hydrolase;
 CC Metalloprotease; Neurotoxin; Plasmid; Transmembrane; Zinc.
 CC INIT MET 0
 CC CHAIN 1 456 Tetanus toxin light chain.
 CC CHAIN 457 1314 Tetanus toxin heavy chain.
 CC METAL 232 232 Zinc (catalytic) (By similarity).
 CC ACT_SITE 233 233 By similarity.
 CC METAL 236 236 Zinc (catalytic) (By similarity).
 CC TRANSMEM 226 246 Potential.
 CC TRANSMEM 669 689 Potential.
 CC DISULFID 438 466 Interchain.
 CC DISULFID 1076 1092
 CC HELIX 876 882
 CC TURN 883 883
 CC STRAND 884 891
 CC TURN 892 893
 CC STRAND 894 897
 CC STRAND 904 907
 CC TURN 909 910
 CC STRAND 912 915
 CC STRAND 920 925
 CC TURN 928 929
 CC STRAND 932 935

FT HELIX 938 940
 FT TURN 941 946
 FT STRAND 949 956
 FT HELIX 962 968
 FT TURN 969 970
 FT STRAND 972 977
 FT STRAND 980 981
 FT HELIX 983 985
 FT STRAND 987 995
 FT TURN 996 997
 FT STRAND 998 1004
 FT TURN 1006 1007
 FT STRAND 1010 1016
 FT STRAND 1020 1020
 FT TURN 1021 1022
 FT STRAND 1031 1037
 FT TURN 1039 1040
 FT STRAND 1042 1047
 FT TURN 1048 1049
 FT STRAND 1050 1056
 FT TURN 1058 1059
 FT STRAND 1068 1074
 FT TURN 1079 1080
 FT STRAND 1082 1091
 FT HELIX 1097 1105
 FT TURN 1106 1107
 FT STRAND 1112 1112
 FT STRAND 1114 1114
 FT TURN 1116 1117
 FT STRAND 1120 1120
 FT STRAND 1122 1122
 FT TURN 1123 1124
 FT STRAND 1127 1131
 FT HELIX 1132 1134
 FT TURN 1135 1136
 FT STRAND 1137 1141
 FT TURN 1144 1145
 FT STRAND 1148 1152
 FT STRAND 1155 1158
 FT TURN 1159 1162
 FT STRAND 1163 1166
 FT STRAND 1173 1178
 FT TURN 1184 1185
 FT STRAND 1188 1188

Query Match 100.0%; Score 74; DB 1; Length 1314;
 Best Local Similarity 100.0%; Pred. No. 0.00021;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 829 QYIKANSKFIGITEL 843

RESULT 3

Q7VQH3 PRELIMINARY; PRT; 447 AA.
 AC Q7VQH3;
 DT 01-OCT-2003 (TEMBLrel. 25, Created)
 DT 01-OCT-2003 (TEMBLrel. 25, Last sequence update)
 DT 01-MAR-2004 (TEMBLrel. 26, Last annotation update)
 DE Enolase (EC 4.2.1.11).
 GN Name:eno; OrderedLocNames=Bfl1157;
 OS Candidatus Blochmannia floridanus.
 OC Bacteria; Proteobacteria; GammaProteobacteria; Enterobacteriales;
 OC Enterobacteriaceae; ant endosymbionts; Candidatus Blochmannia.
 OX NCBI_TaxID=203907;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=22784745; PubMed=12986019;
 RA Gil R., Silva F.J., Zientz E., Delmotte F., Gonzalez-Candelas F.,
 RA Latorre A., Rausell C., Kamerbeek J., Gadau J., Hoelldobler B.,
 RA van Ham R.C.H.J., Gross R., Moya A.;

RT "The genome sequence of Blochmannia floridanus: comparative analysis
 of reduced genomes.";
 RL Proc. Natl. Acad. Sci. U.S.A. 100:9388-9393(2003).
 CC -!- CATALYTIC ACTIVITY: 2-phospho-D-glycerate = phosphoenolpyruvate +
 H(2)O.
 CC -!- COFACTOR: Magnesium is required for catalysis and for stabilizing
 the dimer (By similarity).
 CC -!- PATHWAY: Glycolysis.
 CC -!- SUBUNIT: Homodimer (By similarity).
 CC -!- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).
 CC -!- SIMILARITY: Belongs to the enolase family.
 DR EMBL; BX248584; CAD83678.1; -.
 DR GO; GO:0000015; C:phosphopyruvate hydratase complex; IEA.
 DR GO; GO:0016829; F:lyase activity; IEA.
 DR GO; GO:0000287; F:magnesium ion binding; IEA.
 DR GO; GO:0004634; F:phosphopyruvate hydratase activity; IEA.
 DR GO; GO:0006096; P:glycolysis; IEA.
 DR InterPro; IPR000941; Enolase.
 DR Pfam; PF00113; Enolase_C; 1.
 DR Pfam; PF03952; Enolase_N; 1.
 DR ProDom; PD000902; Enolase; 1.
 DR TIGRFAMs; TIGR01060; eno; 1.
 DR PROSITE; PS00164; ENOLASE; 1.
 DR Complete proteome; Glycolysis; Lyase; Magnesium.
 SQ SEQUENCE 447 AA; 49005 MW; 465B69C3273C7AC4 CRC64;

Query Match 62.2%; Score 46; DB 2; Length 447;
 Best Local Similarity 46.7%; Pred. No. 11;
 Matches 7; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 416 EFLKDSKFGVNEI 430

RESULT 4

SYA_ENTFA
 ID SYA_ENTFA STANDARD; PRT; 880 AA.
 AC Q835J8;
 DT 29-MAR-2004 (Rel. 43, Created)
 DT 29-MAR-2004 (Rel. 43, Last sequence update)
 DT 01-OCT-2004 (Rel. 45, Last annotation update)
 DE Alanyl-tRNA synthetase (EC 6.1.1.7) (Alanine--tRNA ligase) (AlaRS).
 GN Name:alas; OrderedLocNames=EFl1379;
 OS Enterococcus faecalis (Streptococcus faecalis).
 OC Bacteria; Firmicutes; Lactobacillales; Enterococcaceae; Enterococcus.
 OX NCBI_TaxID=1351;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=V583 / ATCC 700802;
 RX MEDLINE=22550857; PubMed=12663927; DOI=10.1126/science.1080613;
 RA Paulsen I.T., Banerjee L., Myers G.S.A., Nelson K.E., Seshadri R.,
 RA Read T.D., Fouts D.E., Eisen J.A., Gill S.R., Heidelberg J.F.,
 RA Tettelin H., Dodson R.J., Umayam L.A., Brinkac L.M., Beanan M.J.,
 RA Daugherty S.C., DeBoy R.T., Durkin S.A., Kolonay J.F., Madupu R.,
 RA Nelson W.C., Vamathevan J.J., Tran B., Upton J., Hansen T., Shetty J.,
 RA Khouri H.M., Utterback T.R., Radune D., Ketchum K.A., Dougherty B.A.,
 RA Fraser C.M.;
 RT "Role of mobile DNA in the evolution of vancomycin-resistant
 Enterococcus faecalis.";
 RL Science 299:2071-2074(2003).
 CC -!- CATALYTIC ACTIVITY: ATP + L-alanine + tRNA(Ala) = AMP +
 diphosphate + L-alanyl-tRNA(Ala).
 CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
 CC -!- SIMILARITY: Belongs to class-II aminoacyl-tRNA synthetase family.
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 or send an email to license@isb-sib.ch).


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DR GO:0019886; P:antigen processing, exogenous antigen via M. . .; IEA.
DR GO:0006955; P:immune response; IEA.
DR InterPro: IPR000353; MHC_II_beta.
DR Pfam: PF00969; MHC_II_beta; 1.
DR ProDom: PD000328; MHC_II_beta; 1.
KW Glycoprotein; MHC II; Transmembrane.
FT NON_TER 1 1
FT NON_TER 86 86
SQ SEQUENCE 86 AA; 9912 MW; E5097729F681F149 CRC64;

Query Match 60.1%; Score 44.5; DB 2; Length 86;
Best Local Similarity 55.6%; Pred. No. 4;
Matches 10; Conservative 3; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS---KFIGITEL 15
Db 33 EYIRFNSTVGKFGVGYTEL 50

RESULT 10
ID Q31590 PRELIMINARY; PRT; 244 AA.
AC Q31590;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DE 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE MHC class II.
GN Name=Mhc-Sasa class II B;
OS Salmo salar (Atlantic salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
OX NCBI_TaxID=8030;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=Leukocytes;
RX MEDLINE=93170890; PubMed=8436418;
RA Hordvik I., Grimholt U., Fosse V.M., Lie Y., Endresen C.;
RT "Cloning and sequence analysis of cDNAs encoding the MHC class II a-
chain in Atlantic salmon, Salmo salar.";
RL Immunogenetics 37:437-441(1993).
DR ENBL; X70166; CAA49725.1; -.
DR PIR; S29982; S29982.
DR HSSP; P04228; 1ES0.
DR GO:0016020; C:membrane; IEA.
DR GO:0006955; P:immune response; IEA.
DR InterPro: IPR007110; Ig-like.
DR InterPro: IPR003597; Ig_c1.
DR InterPro: IPR000353; MHC_II_beta.
DR Pfam; PF07654; C1-set; 1_-.
DR ProDom; PD000328; MHC_II_beta; 1.
DR SMART; SM00407; IGL1; 1.
DR PROSITE; PS50835; IG_LIKE; 1.
KW Glycoprotein; MHC II; Transmembrane.
SQ SEQUENCE 244 AA; 27449 MW; 496CB9EA9D73765C CRC64;

Query Match 60.1%; Score 44.5; DB 2; Length 244;
Best Local Similarity 55.6%; Pred. No. 11;
Matches 10; Conservative 3; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS---KFIGITEL 15
Db 51 EYIRFNSTVGKFGVGYTEL 68

RESULT 11
VG84 BPML5
ID VG84 BPML5 STANDARD; PRT; 66 AA.
AC Q05301;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)

```

```

DE Gene 84 protein (GP84).
GN Name=84;
OS Mycobacteriophage L5.
OC Viruses; dsDNA viruses, no RNA stage; Caudovirales; Siphoviridae;
OC L5-like viruses.
OX NCBI_TaxID=31757;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93211282; PubMed=8459766;
RA Hatfull G.F., Sarkis G.J.;
RT "DNA sequence, structure and gene expression of mycobacteriophage L5:
  a phage system for mycobacterial genetics.";
RL Mol. Microbiol. 7:395-405(1993).
CC -----
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CC -----
DR EMBL; Z18946; CAA79460.1; -
DR PIR; S31029; S31029.
SQ SEQUENCE 66 AA; 7424 MW; 9C7104C7A4FA74A5 CRC64;

Query Match 59.5%; Score 44; DB 1; Length 66;
Best Local Similarity 57.1%; Pred. No. 3.8;
Matches 8; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
Db 50 YIKRNGKFGVGTVEV 63

RESULT 12
Q9XG37 PRELIMINARY; PRT; 546 AA.
AC Q9XG37;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE Hypothetical protein.
OS Guillardia theta (Cryptomonas phi).
OC Eukaryota; Cryptophyta; Cryptomonadaceae; Guillardia.
OX NCBI_TaxID=55529;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20087226; PubMed=10618395;
RA Zauner S., Fraunholz M., Wastl J., Penny S.L., Beaton M.,
RA Cavalier-Smith T., Maier U., Douglas S.;
RT "Chloroplast protein and centrosomal genes, a tRNA intron, and odd
  telomeres in an unusually compact eukaryotic genome, the cryptomonad
  nucleomorph.";
RT Proc. Natl. Acad. Sci. U.S.A. 97:200-205(2000).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=21233349; PubMed=11323671;
RA Douglas S., Zauner S., Fraunholz M., Beaton M., Penny S., Deng L.,
RA Wu X., Reith M., Cavalier-Smith T., Maier U.;
RT "The highly reduced genome of an enslaved algal nucleus.";
RL Nature 410:1091-1096(2001).
RL EMBL; AJ010592; CAB40403.1; -
KM Hypothetical protein.
SQ SEQUENCE 546 AA; 66218 MW; 7303950F632BE6F2 CRC64;

Query Match 59.5%; Score 44; DB 2; Length. 546;
Best Local Similarity 50.0%; Pred. No. 30;
Matches 7; Conservative 6; Mismatches 1; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
Db 445 FIKNSRFRMLTEI 458

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RESULT 13

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Q31578 PRELIMINARY; PRT; 67 AA.
AC Q31578;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Salmo salar (DB03) MHC class II beta 1 (Fragment).
OS Salmo salar (Atlantic salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
OX NCBI_TaxID=8030;
RN [1]
RP SEQUENCE FROM N.A.
RX Grimholt U., Olsaker I., de Vries Lindstrom C., Lie O.;
RL Submitted (OCT-1993) to the EMBL/GenBank/DBJ databases.
DR EMBL; L24929; AAA49590.1; -
DR GO; GO:0016021; C:integral to membrane; IEA.
DR GO; GO:0045012; F:MHC class II receptor activity; IEA.
DR GO; GO:0019884; P:antigen presentation, exogenous antigen; IEA.
DR GO; GO:0019886; P:antigen processing, exogenous antigen via M. . .; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR000353; MHC_II_beta.
DR Pfam; PF00969; MHC_II_beta; 1.
DR ProDom; PD000328; MHC_II_beta; 1.
KW Glycoprotein; MHC II; Transmembrane.
FT NON_TER 1
FT NON_TER 67
SQ SEQUENCE 67 AA; 7449 MW; 42771AEDBABA6626 CRC64;

```

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Query Match 58.8%; Score 43.5; DB 2; Length 67;
Best Local Similarity 50.0%; Pred. No. 4.8;
Matches 9; Conservative 4; Mismatches 2; Indels 3; Gaps 1;

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QY 1 QYIKANS---KFIGITEL 15

Db 16 EYVFNSTVGKFGVGTTEL 33

RESULT 14

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Q9CF66 PRELIMINARY; PRT; 180 AA.
AC Q9CF66;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Spermidine acetyltransferase (EC 2.3.1.57).
GN Name=yqfF; OrderedLocusNames=L11615;
OS Lactococcus lactis (subsp. lactis) (Streptococcus lactis).
OC Bacteria; Firmicutes; Lactobacillales; Streptococcaceae; Lactococcus.
OX NCBI_TaxID=1360;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=IL1403;
RX MEDLINE=21235186; PubMed=11337471;
RA Bolotin A., Wincker P., Manger S., Jaillon O., Malarre K.,
RA Weisenbach J., Ehrlich S.D., Sorokin A.;
RT "The complete genome sequence of the lactic acid bacterium Lactococcus
  lactis ssp. lactis IL1403.";
RL Genome Res. 11:731-753(2001).
RL EMBL; AF006391; AAK05713.1; -
DR PIR; G86826; G86826.
DR GO; GO:0004145; F:diacylglycerol N-acetyltransferase activity; IEA.
DR GO; GO:0016740; F:transferase activity; IEA.
DR InterPro; IPR000182; GCN5acetyl_trans.
DR Pfam; PF00583; Acetyltransf.1; 1.
KW Complete proteome; Transferase.
SQ SEQUENCE 180 AA; 21022 MW; 6DBD148524C0DF3C CRC64;

```

Query Match

58.1%; Score 43; DB 2; Length 180;

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 Fahey J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,
 Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
 Krzywinski M.I., Skalska U., Smallus D.E., Schnerch A., Schein J.E.,
 Jones S.J., Marra M.A.;
 "Generation and initial analysis of more than 15,000 full-length human
 and mouse cDNA sequences.";
 Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 [2]
 SEQUENCE FROM N.A.
 STRAIN=Czech II;
 TISSUE=Mammary tumor metastasized to lung. Tumor arose spontaneously;
 Strauberg R.;
 Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
 EMBL; BC032154; AAH32154.1; -.
 HSSP; Q02410; 1AQC.
 MGD; MGI:1920407; Gulp1.
 InterPro; IPR002086; Aldehyde dehydr.
 InterPro; IPR011036; PH related.
 InterPro; IPR006020; PTE_PID.
 Pfam; PF00640; PID; 1.
 SMART; SM00462; PTB; 1.
 PROSITE; PS00687; ALDEHYDE_DEHYDR_GLU; UNKNOWN_1.
 PROSITE; PS01179; PID; 1.
 SEQUENCE 304 AA; 34470 MW; D99154EP53EPDC45 CRC64;
 Query Match 58.1%; Score 43; DB 2; Length 304;
 Best Local Similarity 57.1%; Pred. No. 26;
 Matches 8; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 2 YIKANXFIGITEL 15
 DB 24 YIPNAKPLGSTEV 37
 Y I K A N X F I G I T E L 1 5
 Y I P N A K P L G S T E V 3 7

RESULT 19
 Q9CYD2 PRELIMINARY; PRT; 309 AA.
 ID Q9CYD2 PRELIMINARY; PRT; 309 AA.
 AC Q9CYD2;
 DT 01-JUN-2001 (TrEMBLrel. 17, Created)
 DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
 DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
 DE Mus musculus 8 days embryo whole body cDNA, RIKEN full-length enriched
 DE library, clone:5730529006 product:CED-6 PROTEIN homolog.
 GN Name=Gulpi;
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 OX [1]
 RN SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=Whole body;
 RC MEDLINE=99279253; PubMed=10349636;
 RA Carninci P., Hayashizaki Y.;
 RT "High-efficiency full-length cDNA cloning.";
 RL Meth. Enzymol. 303:19-44(1999).
 RN [2]
 RN SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=Whole body;
 RC MEDLINE=21085660; PubMed=11217851;
 RA RIKEN FANTOM Consortium;
 RT "Functional annotation of a full-length mouse cDNA collection.";
 RL Nature 409:685-690(2001).
 RN [3]
 RN SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=Whole body;
 RA The FANTOM Consortium;
 RA the RIKEN Genome Exploration Research Group Phase I & II Team;
 RT "Analysis of the mouse transcriptome based on functional annotation of
 RT 60,770 full-length cDNAs.";
 RL Nature 420:563-573(2002).
 RL Nature 420:563-573(2002).


```

OC Vibrionaceae; Photobacterium.
OX NCBI_TaxID=74109;
RN [1]_SEQUENCE FROM N.A.
RP "Genome analysis of Photobacterium profundum reveals the complexity of
RA high pressure adaptations.";
RA Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
RA Cestaro A., Malacrida G., Simionati B., Cannata N., Bartlett D.,
RA Valle G.;
RT "Genome analysis of Photobacterium profundum reveals the complexity of
RT high pressure adaptations.";
RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL; CR378677; CAG22530.1; -.
DR InterPro; IPR002559; Transposase_11.
DR Pfam; PF01609; Transposase_11; 1.
DR PROSITE; PS00228; TUBULIN_B_AUTOREG; UNKNOWN_1.
KW Complete proteome; Hypothetical protein.
SQ SEQUENCE 394 AA; 47092 MW; 5C04F2C6AEA21CE8 CRC64;

Query Match 58.1%; Score 43; DB 2; Length 394;
Best Local Similarity 56.2%; Pred. No. 34;
Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

QY 2 YIKANS--KFIGITEL 15
Db 201 FIKANSKPKYVGFTQL 216

RESULT 23
CAG22530
ID CAG22530 PRELIMINARY; PRT; 394 AA.
AC CAG22530;
DT 10-MAY-2004 (TrEMBLrel. 27, Created)
DT 10-MAY-2004 (TrEMBLrel. 27, Last sequence update)
DT 10-MAY-2004 (TrEMBLrel. 27, Last annotation update)
DE Hypothetical transposase.
GN TNPOR PBPRB0657.
OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
OC Vibrionaceae; Photobacterium.
OX NCBI_TaxID=74109;
RN [1]_SEQUENCE FROM N.A.
RP SEQUENCE FROM N.A.
RC STRAIN=ss9;
RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
RA Cestaro A., Malacrida G., Simionati B., Cannata N., Bartlett D.,
RA Valle G.;
RT "Genome Analysis of Photobacterium profundum reveals the complexity of
RT high pressure adaptations.";
RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=ss9;
RA Cestaro A.;
RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL; CR378677; CAG22530.1; -.
KW Hypothetical protein.
SQ SEQUENCE 394 AA; 47092 MW; 5C04F2C6AEA21CE8 CRC64;

Query Match 58.1%; Score 43; DB 2; Length 394;
Best Local Similarity 56.2%; Pred. No. 34;
Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

QY 2 YIKANS--KFIGITEL 15
Db 201 FIKANSKPKYVGFTQL 216

RESULT 24
Q6LGL2
ID Q6LGL2 PRELIMINARY; PRT; 395 AA.
AC Q6LGL2;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Hypothetical transposase of Tn10.

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GN Name=SP2983; OrderedLocusNames=PBPRB1708;
OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
OC Vibrionaceae; Photobacterium.
OX NCBI_TaxID=74109;
RN [1]_SEQUENCE FROM N.A.
RP SEQUENCE FROM N.A.
RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
RA Cestaro A., Malacrida G., Simionati B., Cannata N., Bartlett D.,
RA Valle G.;
RT "Genome analysis of Photobacterium profundum reveals the complexity of
RT high pressure adaptations.";
RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL; CR378680; CAG23568.1; -.
DR InterPro; IPR002453; Beta_tubulin.
DR Pfam; PF01609; Transposase_11; 1.
DR PROSITE; PS00228; TUBULIN_B_AUTOREG; UNKNOWN_1.
KW Complete proteome; Hypothetical protein.
SQ SEQUENCE 395 AA; 46807 MW; F380D2F4B3C3F45C CRC64;

Query Match 58.1%; Score 43; DB 2; Length 395;
Best Local Similarity 56.2%; Pred. No. 34;
Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

QY 2 YIKANS--KFIGITEL 15
Db 202 FIKANSKPKYVGFTQL 217

RESULT 25
Q6LGM3
ID Q6LGM3 PRELIMINARY; PRT; 395 AA.
AC Q6LGM3;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Hypothetical transposase of Tn10.
GN Name=SP2983; OrderedLocusNames=PBPRB1697;
OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
OC Vibrionaceae; Photobacterium.
OX NCBI_TaxID=74109;
RN [1]_SEQUENCE FROM N.A.
RP SEQUENCE FROM N.A.
RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
RA Cestaro A., Malacrida G., Simionati B., Cannata N., Bartlett D.,
RA Valle G.;
RT "Genome analysis of Photobacterium profundum reveals the complexity of
RT high pressure adaptations.";
RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL; CR378680; CAG23557.1; -.
DR InterPro; IPR002453; Beta_tubulin.
DR Pfam; PF01609; Transposase_11; 1.
DR PROSITE; PS00228; TUBULIN_B_AUTOREG; UNKNOWN_1.
KW Complete proteome; Hypothetical protein.
SQ SEQUENCE 395 AA; 46793 MW; D710D720S953FCC1 CRC64;

Query Match 58.1%; Score 43; DB 2; Length 395;
Best Local Similarity 56.2%; Pred. No. 34;
Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

QY 2 YIKANS--KFIGITEL 15
Db 202 FIKANSKPKYVGFTQL 217

Search completed: January 25, 2005, 06:06:21
Job time : 51.5833 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 26, 2005, 07:04:37 ; Search time 93.3333 Seconds
(without alignments)
57.653 Million cell updates/sec

Title: US-09-806-703A-12

Perfect score: 74

Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 211

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 500 summaries

Database :

A_Geneseq_23Sep04:*
1: Geneseq1980s:*
2: Geneseq1990s:*
3: Geneseq2000s:*
4: Geneseq2001s:*
5: Geneseq2002s:*
6: Geneseq2003as:*
7: Geneseq2003bs:*
8: Geneseq2004s:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	15	2	AAR06310
2	74	100.0	15	2	ADB87354
3	74	100.0	15	2	ADW11505
4	74	100.0	15	2	AAW35506
5	74	100.0	15	2	AAW71321
6	74	100.0	15	2	AAW67033
7	74	100.0	15	2	AAW67578
8	74	100.0	15	2	AAW04051
9	74	100.0	15	2	AAW73220
10	74	100.0	15	3	AAW92625
11	74	100.0	15	3	AAW92625
12	74	100.0	15	3	AAW92625
13	74	100.0	15	3	AAW92625
14	74	100.0	15	3	AAW92625
15	74	100.0	15	3	AAW92625
16	74	100.0	15	4	AAW11763
17	74	100.0	15	4	AAW49071
18	74	100.0	15	4	AAW99515
19	74	100.0	15	4	AAW46172
20	74	100.0	15	4	AAW68636
21	74	100.0	15	4	AAW61956
22	74	100.0	15	4	AAW20143
23	74	100.0	15	4	AAW85451
24	74	100.0	15	4	AAW85701
25	74	100.0	15	5	AAU97872

Abg31774	T helper	15	5	ABG31774	74	100.0
Abp72721	Tetanus t	15	6	ABP72721	74	100.0
Ada25169	C. tetani	15	6	ADA25169	74	100.0
Aao30454	Tetanus t	15	6	Aao30454	74	100.0
AbR2482	Tetanus t	15	7	ABR2482	74	100.0
Adc09976	Tetanus t	15	7	ADC09976	74	100.0
Adc81609	Tetanus t	15	7	ADC81609	74	100.0
Adc89658	C. tetani	15	7	ADC89658	74	100.0
Adl90086	Universal	15	8	ADL90086	74	100.0
Adm06894	Tetanus t	15	8	ADM06894	74	100.0
Adp02883	Tetanus t	15	8	ADP02883	74	100.0
Adp02898	Fusion pr	15	8	ADP02898	74	100.0
Adp02876	Tetanus t	15	8	ADP02876	74	100.0
Adp02885	Tetanus t	15	8	ADP02885	74	100.0
Ado24820	Tetanus t	15	8	ADO24820	74	100.0
Adp48561	Promiscuo	15	8	ADP48561	74	100.0
Adp76011	Peptide e	15	8	ADP76011	74	100.0
Aaw35445	T-cell st	16	2	AAW35445	74	100.0
Aay29705	Clostridi	16	2	AAW29705	74	100.0
Aau11413	Tetanus t	16	5	AAU11413	74	100.0
Aau93865	Clostridi	16	5	AAU93865	74	100.0
Adel0941	Chimeric	16	7	ADEL0941	74	100.0
Adk41128	Tetanus t	16	7	ADK41128	74	100.0
Adm39833	C. tetani	16	7	ADM39833	74	100.0
Adg64012	Recombina	16	8	ADG64012	74	100.0
Aao24402	HLA-A24-r	16	8	AAO24402	74	100.0
Ado43877	Amino aci	16	8	ADO43877	74	100.0
Adp73582	Clostridi	16	8	ADP73582	74	100.0
Adp90539	Helper pe	16	8	ADP90539	74	100.0
Aar62692	Helper T	17	2	AAR62692	74	100.0
Aar82573	Tetanus t	17	2	AAR82573	74	100.0
Aar88395	T-cell an	17	2	AAR88395	74	100.0
Aaw05599	Tetanus t	17	2	AAW05599	74	100.0
Aay99274	HLA class	17	3	AAW99274	74	100.0
Aay58768	Unidentifi	17	3	AAW58768	74	100.0
Aay80056	Pathogen	17	3	AAW80056	74	100.0
Aay54539	T helper	17	3	AAW54539	74	100.0
Aab31118	Antigenic	17	4	AAB31118	74	100.0
Aam99516	Vaccine r	17	4	AAM99516	74	100.0
Aab84435	Amino aci	17	4	AAB84435	74	100.0
Aab30941	Amino aci	17	4	AAB30941	74	100.0
Aab31029	Antigenic	17	4	AAB31029	74	100.0
Aag62904	Amino aci	17	4	AAG62904	74	100.0
Aab15589	Peptide 5	17	4	AAB15589	74	100.0
Aae35609	Clostridi	17	6	AAE35609	74	100.0
Ada09238	Tetanus t	17	6	ADA09238	74	100.0
Adm80624	Human hel	17	7	ADM80624	74	100.0
Adj74074	Tetanus i	17	8	ADJ74074	74	100.0
Adj25950	Tetanus t	17	8	ADJ25950	74	100.0
Aay26607	HIV-deriv	18	2	AAW26607	74	100.0
Abb09794	Peptide T	18	5	ABB09794	74	100.0
Aay99055	HLA class	19	3	AAW99055	74	100.0
Aam99517	Vaccine r	19	4	AAM99517	74	100.0
Adh09986	Modified	20	8	ADH09986	74	100.0
Aab46196	Tetanus t	22	4	AAB46196	74	100.0
Aab46175	Tetanus t	22	4	AAB46175	74	100.0
Aab46178	Tetanus t	22	4	AAB46178	74	100.0
Aab46203	Human APP	22	4	AAB46203	74	100.0
Adp02903	Fusion pr	22	8	ADP02903	74	100.0
Adp02900	Fusion pr	22	8	ADP02900	74	100.0
Adp02919	Fusion pr	22	8	ADP02919	74	100.0
Aay92650	PSNep007	25	3	AAW92650	74	100.0
Aay92651	PSNep009	25	3	AAW92651	74	100.0
Aab49092	Amyloid b	25	4	AAB49092	74	100.0
Aar62701	LHRH-cont	27	2	AAR62701	74	100.0
Aar82596	IGE CH4 r	27	2	AAR82596	74	100.0
Aab49074	Amyloid b	27	4	AAB49074	74	100.0
Aab49077	Amyloid b	27	4	AAB49077	74	100.0
Adh89947	LHRH pept	27	7	ADH89947	74	100.0
Adj56906	Human LHR	27	8	ADJ56906	74	100.0
Aau11422	Synthetic	28	5	AAU11422	74	100.0

99	74	100.0	29	2	AAR83561	Aar83561 IgE CH4 r	172	74	100.0	285	6	AAO30457	Aao30457 hIL5-P30-
100	74	100.0	30	2	AAR44398	Aar44398 HIV anti-g	173	74	100.0	285	6	AAO30458	Aao30458 hIL5-P2-P
101	74	100.0	31	2	AAR22632	Aay82632 Tetanus t	174	74	100.0	287	6	AAO30459	Aao30459 hIL5.36 v
102	74	100.0	31	5	AAU11426	Aau11426 Synthetic	175	74	100.0	287	6	AAO30460	Aao30460 hIL5.37 v
103	74	100.0	32	3	AAV82636	Aay82636 Tetanus t	176	74	100.0	350	3	AAO30460	Aay70278 Recombina
104	74	100.0	36	8	ADP02886	Adp02886 Tetanus t	177	74	100.0	514	6	AAO30491	Aay70278 Human TNF
105	74	100.0	37	2	AAR65389	Aar65389 Universal	178	74	100.0	514	6	AAO30490	Aao30490 Human TNF
106	74	100.0	37	2	AAR65383	Aar65383 Universal	179	74	100.0	514	6	AAO30495	Aao30495 Human TNF
107	74	100.0	43	4	AAB49076	Aab49076 Amyloid b	180	74	100.0	517	6	AAO30492	Aao30492 Human TNF
108	74	100.0	43	4	AAB46177	Aab46177 Tetanus t	181	74	100.0	537	1	ABR82481	ABr82481 Truncated
109	74	100.0	43	8	ADP02902	Adp02902 Fusion pr	182	74	100.0	573	1	AAO30492	AAp70345 Portion o
110	74	100.0	44	4	AAB49090	Aab49090 Amyloid b	183	74	100.0	693	3	AAO30495	Aay92649 Mutant hu
111	74	100.0	44	4	AAB46194	Aab46194 Tetanus t	184	74	100.0	693	3	AAO30495	Aay92647 Mutant hu
112	74	100.0	44	8	ADP02917	Adp02917 Fusion pr	185	74	100.0	708	7	ABR82479	ABr82479 Modified
113	74	100.0	46	5	AAU11430	Aau11430 Synthetic	186	74	100.0	713	7	ABR82480	ABr82480 Modified
114	74	100.0	47	2	AAR62723	Aar62723 LHRH-cont	187	74	100.0	717	7	ABR82478	ABr82478 Modified
115	74	100.0	50	2	AAO06131	Aaw06131 Anti-cho	188	74	100.0	750	3	AAO30495	AAy92637 Mutant hu
116	74	100.0	51	4	AAB49091	Aab49091 Amyloid b	189	74	100.0	750	3	AAO30495	AAy92639 Mutant hu
117	74	100.0	51	4	ADP02916	Adp02916 Fusion pr	190	74	100.0	750	3	AAO30495	AAy92638 Mutant hu
118	74	100.0	51	8	ADP02916	Adp02916 Fusion pr	191	74	100.0	750	3	AAO30495	AAy92631 Mutant hu
119	74	100.0	51	8	ADP02916	Adp02916 Fusion pr	192	74	100.0	750	3	AAO30495	AAy92645 Mutant hu
120	74	100.0	56	8	ADP02916	Adp02916 Fusion pr	193	74	100.0	750	3	AAO30495	AAy92637 Mutant hu
121	74	100.0	56	8	ADP02916	Adp02916 Fusion pr	194	74	100.0	750	3	AAO30495	AAy92632 Mutant hu
122	74	100.0	64	8	ADP02916	Adp02916 Fusion pr	195	74	100.0	750	3	AAO30495	AAy92638 Mutant hu
123	74	100.0	68	8	ADP02916	Adp02916 Fusion pr	196	74	100.0	750	3	AAO30495	AAy92640 Mutant hu
124	74	100.0	68	8	ADP02916	Adp02916 Fusion pr	197	74	100.0	750	3	AAO30495	AAy92630 Mutant hu
125	74	100.0	72	4	AAB46190	Aab46190 Tetanus t	198	74	100.0	750	3	AAO30495	AAy92633 Mutant hu
126	74	100.0	72	4	ADP02897	Adp02897 Fusion pr	199	74	100.0	750	3	AAO30495	AAy92646 Mutant hu
127	74	100.0	79	8	ADP02915	Adp02915 Fusion pr	200	74	100.0	750	3	AAO30495	AAy92634 Mutant hu
128	74	100.0	101	8	ADP02896	Adp02896 Fusion pr	201	74	100.0	750	3	AAO30495	AAy92635 Mutant hu
129	74	100.0	109	4	AAB20147	Aab20147 Growth di	202	74	100.0	750	3	AAO30495	AAy92643 Mutant hu
130	74	100.0	109	4	AAB20146	Aab20146 Growth di	203	74	100.0	750	3	AAO30495	AAy92636 Mutant hu
131	74	100.0	109	4	AAB20145	Aab20145 Growth di	204	74	100.0	750	3	AAO30495	AAy92641 Mutant hu
132	74	100.0	116	3	AAB45502	Aab45502 Modified	205	74	100.0	750	3	AAO30495	AAy92644 Mutant hu
133	74	100.0	116	3	AAB45526	Aab45526 Modified	206	74	100.0	872	8	ADL90427	ADl90427 Clostridi
134	74	100.0	118	3	AAB45491	Aab45491 Modified	207	74	100.0	875	8	ADL90085	ADl90085 Tetanus t
135	74	100.0	118	3	AAB45518	Aab45518 Modified	208	74	100.0	875	8	ADL90425	ADl90425 Clostridi
136	74	100.0	122	3	AAB45527	Aab45527 Modified	209	74	100.0	887	8	ADL90429	ADl90429 Clostridi
137	74	100.0	122	3	AAB45503	Aab45503 Modified	210	74	100.0	1315	4	ADL90423	ADl90423 Clostridi
138	74	100.0	122	3	AAB45504	Aab45504 Modified	211	74	100.0	1315	8	ADL90423	ADl90423 Clostridi
139	74	100.0	124	3	AAB45519	Aab45519 Modified							
140	74	100.0	124	3	AAB45523	Aab45523 Modified							
141	74	100.0	124	3	AAB45492	Aab45492 Modified							
142	74	100.0	124	3	AAB45505	Aab45505 Modified							
143	74	100.0	124	3	AAB45501	Aab45501 Modified							
144	74	100.0	124	3	AAB45493	Aab45493 Modified							
145	74	100.0	124	3	AAB45517	Aab45517 Modified							
146	74	100.0	126	3	AAB45490	Aab45490 Modified							
147	74	100.0	126	3	AAB45494	Aab45494 Modified							
148	74	100.0	126	3	AAB45514	Aab45514 Modified							
149	74	100.0	136	4	AAB49089	Aab49089 Amyloid b							
150	74	100.0	137	3	AAV82634	Aay82634 Tetanus t							
151	74	100.0	139	3	AAB45510	Aab45510 Modified							
152	74	100.0	141	3	AAB45499	Aab45499 Modified							
153	74	100.0	145	3	AAB45530	Aab45530 Modified							
154	74	100.0	147	3	AAB45522	Aab45522 Modified							
155	74	100.0	158	2	AAW81331	Aaw81331 TNF2-7, a							
156	74	100.0	158	2	AAW81328	Aaw81328 TNF2-3, a							
157	74	100.0	158	2	AAW81329	Aaw81329 TNF2-4, a							
158	74	100.0	158	2	AAW81330	Aaw81330 TNF2-5, a							
159	74	100.0	158	2	AAW81327	Aaw81327 TNF2-1, a							
160	74	100.0	158	5	ABO7277	Abb07277 Human TNF							
161	74	100.0	158	5	ABO7281	Abb07281 Human TNF							
162	74	100.0	158	5	ABO7276	Abb07276 Human TNF							
163	74	100.0	158	5	ABO7275	Abb07275 Human TNF							
164	74	100.0	158	5	ABO7280	Abb07280 Human TNF							
165	74	100.0	160	4	AAV820153	Aay820153 Growth di							
166	74	100.0	173	3	AAV84425	Aay84425 DNA encod							
167	74	100.0	182	3	AAV84424	Aay84424 An osteop							
168	74	100.0	194	6	AAO30488	Aao30488 Human TNF							
169	74	100.0	216	6	AAV92665	Aay92665 MUC-1 ana							
170	74	100.0	254	4	AAV92665	Aay92665 MUC-1 ana							
171	74	100.0	254	4	AAV92665	Aay92665 MUC-1 ana							

ALIGNMENTS

RESULT 1

AAR06310

ID AAR06310 standard; protein; 15 AA.

XX

XX

XX

DT 04-DEC-1990 (first entry)

DE Tetanus toxin epitope.

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

KW Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

DR WPI; 1990-225582/30.
 XX Synthetic peptide(s) corresp. to tetanus toxin epitope(s) - used as
 PT universal carriers for prepn. of immunogenic conjugate(s) for use as
 PT vaccines.
 XX
 PS Claim 1; Page 17; 20pp; English.
 XX
 CC Epitopic peptides may be used with synthetic hapten derived from a
 CC pathogen to generate an immune response to the pathogen. Peptides are
 CC recognised by numerous T-helper cell clones within the context of a wide
 CC range of alleles of the human MHC. The peptides may be used in an
 CC antimalarial vaccine inducing Ab. response to P.falciparum
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 2
 ADB87354
 ID ADB87354 standard; peptide; 15 AA.
 AC ADB87354;
 XX
 DT 04-DEC-2003 (first entry)
 XX
 DE Cytotoxic T epitope retro-partly inverso peptide TT830-844.
 XX
 XX immunoretroid; anti-immunoretroid; CONH linkage; NHCO linkage;
 KW retropeptide; retroinverse peptide; vaccine; viral; bacterial infection;
 XW autoimmune disease; neurodegenerative disease; retro-partly;
 KW inverso peptide.
 XX
 XX Unidentified.
 OS
 XX
 XX Key Location/Qualifiers
 FH Modified-site 1
 FT /note= "Modified by H"
 FT Modified-site 15
 FT /note= "Modified by OH"
 FT
 XX
 XX FR2717081-A1.
 XX
 XX 15-SEP-1995.
 XX
 XX 14-MAR-1994; 94FR-00002950.
 XX
 XX 14-MAR-1994; 94FR-00002950.
 XX
 XX (CNRS) CENT NAT RECH SCI.
 XX
 XX Guichard G, Muller S, Briand J, Regenmortel MHV;
 PI
 XX WPI; 1995-322414/42.
 DR
 XX
 XX Therapeutic and diagnostic uses of retro peptide analogues - corresp. to
 PT parent peptide chains with CONH linkages replaced by NHCO linkages, also
 PT antibodies against the peptide(s).
 XX
 XX Disclosure; Page 22; 58pp; French.
 XX
 XX This invention relates to the novel uses of 'immunoretroids' or anti-
 CC immunoretroid antibodies, where the immunoretroids are peptide analogues
 CC in which one or more (preferably all) of the CONH linkages in the chain
 CC of the corresponding parent peptides are replaced by NHCO linkages and
 CC the chirality of each amino acid residue, whether involved in NHCO

CC linkages or not, is either conserved or inverted with regards to the
 CC corresponding amino acid residue in the parent peptides. For example,
 CC 'retropeptides' or 'retroinverse peptides', provided that the
 CC immunoretroids are capable of forming complexes with the anti-
 CC immunoretroid antibodies and with antibodies directed against the parent
 CC peptides or parent proteins and/or the parent peptide enantiomers or
 CC parent protein enantiomers. The immunoretroids are used to prepare
 CC medicaments for preventing or treating pathologies associated with the
 CC presence of an exogenous or endogenous protein capable of being
 CC implicated directly or indirectly in the appearance and/or development of
 CC the pathologies. Immunoretroids can also be used to prepare vaccines for
 CC preventing pathologies associated with the presence of an exogenous or
 CC endogenous protein recognised by antibodies directed against
 CC immunoretroids. Comparisons containing immunoretroids associated with a
 CC carrier molecule capable of inducing production of antibodies against an
 CC exogenous or endogenous protein responsible for a pathology, or of
 CC inducing a cytotoxic cellular immune response are useful as vaccines.
 CC Pathologies that can be diagnosed or treated are especially viral or
 CC bacterial infections, autoimmune diseases and neurodegenerative diseases.
 CC This sequence represents a cytotoxic T epitope related retro-partly
 CC inverso peptide relating to the retropeptides of the invention.
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 3
 AAW11505
 ID AAW11505 standard; protein; 15 AA.
 XX
 AC AAW11505;
 XX
 DT 24-SEP-1997 (first entry)
 XX
 DE Tetanus toxoid universal Th epitope TT830.
 XX
 KW Humanised antibody; anti-Fc receptor; H22; bifunctional; bispecific;
 KW fusion protein; chimera; tetanus toxoid; helper T cell epitope;
 KW antigen presentation; ds.
 XX
 OS Clostridium tetani.
 XX
 XX WO9640789-A1.
 XX
 XX 19-DEC-1996.
 XX
 XX 07-JUN-1996; 96WO-US009988.
 XX
 XX 07-JUN-1995; 95US-00484172.
 XX
 XX (MEDA-) MEDAREX INC.
 XX
 XX Deo YM, Goldstein J, Graziano R, Somasundaram C;
 PI
 XX WPI; 1997-052242/05.
 DR N-PSDB; AAT58127.
 DR
 XX Recombinant, multi-specific anti-Fc receptor antibody molecules - also
 PT comprise an anti-target portion, used for the treatment of cancer,
 PT autoimmune disease and pathogenic infection.
 XX
 XX Example 7; Fig 24; 115pp; English.
 PS
 XX Synthetic DNA coding for the wild-type universal Th epitope from tetanus
 CC toxoid, designated TT830, was fused to the 3'-end of DNA encoding heavy
 CC chain sequences from the humanised anti-Fc gamma RI monoclonal antibody

CC H22. The resulting fusion protein was shown to be significantly more
 CC efficient in antigen presentation and T cell stimulation than the T830
 CC epitope alone. A similar fusion construct was prepared coding for a
 CC mutant, antagonistic form of the epitope (designated T833S) fused to the
 CC anti-Fc gamma RI. The Fab22-T833S is at least 100 times more effective
 CC than T833S in inhibiting T cell activation
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 4

AAW35506
 ID AAW35506 standard; peptide; 15 AA.

XX AC AAW35506;

XX DT 25-MAR-2003 (revised)

XX DT 22-APR-1998 (first entry)

XX DE Universal T-cell epitope peptide SEQ ID NO:8.

XX T-cell stimulatory peptide; immunogen; non-dendritic; carrier; tumour;
 KW scaffold; inhibition; metastasis; wound healing; solid phase.
 KW Unidentified.

XX OS WO9738011-A1.

XX PN 16-OCT-1997.

XX PP 03-APR-1997; 97WO-DK000146.

XX PR 03-APR-1996; 96DK-00000398.

XX PA (PEPR-) PEPRESEARCH AS.

XX PI Heegaard PMH, Jakobsen PH;

XX PS WPI; 1997-512645/47.

XX Non-dendritic peptide carrier linked to a solid phase - useful as a
 PT diagnostic agent and as a scaffold for production of chemical
 PT derivatives.

XX Example 20; Page 124; 262pp; English.

XX A non-dendritic peptide carrier (A) has been developed which is coupled
 CC through a linker to a solid phase, forming a complex of (A)-solid phase.
 CC where (A) comprises 10-50 amino acids capable of forming a secondary
 CC structure in a benign buffer after liberation from the solid phase, and
 CC further the (A)-solid phase complex comprises an immunogenic substance
 CC and/or an immune mediator coupled on (A). The present sequence represents
 CC a peptide used in an example from the present invention. An (A)-solid
 CC phase complex can be used as a scaffold for the production of chemical
 CC derivatives, characterised by covalently attaching molecules at
 CC attachment points. Alternatively (A) is used as a scaffold-peptide for
 CC the incorporation into an immunostimulating complex (Iscom) resulting an
 CC (A)-Iscom complex which is used for the chemical coupling of antigenic
 CC substances in an aqueous solution by conjugation. (A) derivatised with
 CC one or more peptides having fibronectin-, laminin- or vitronectin-like
 CC binding activities can be used for the promotion of cell-attachment to
 CC plastic surfaces, in particular to inhibit tumour growth and metastasis,
 CC and for promotion of wound healing. Also a derivatised (A) can be used
 CC for the selection of specifically-binding aptamers or as a diagnostic
 CC agent. Such diagnostic (A) molecules could be used to detect molecules

CC derived from or indicative of pregnancy or of a disease, such as an
 CC infectious, autoimmune or cancerous disease. (Updated on 25-MAR-2003 to
 CC correct PF field.)
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 5

AAW71321

XX ID AAW71321 standard; peptide; 15 AA.

XX AC AAW71321;

XX DT 26-NOV-1998 (first entry)

XX DE Universal helper T-cell epitope P2 derived from tetanus toxin.

XX KW Liver stage; Plasmodium; Navy Yoelii Liver Stage 3 antibody; NYLS3;
 KW hepatic and erythrocytic stage protein; PyHEP17; vaccine;
 KW malaria parasite; teanus toxin; P2; helper T-cell epitope.

XX OS Synthetic.

XX OS Clostridium tetani.

XX PN US5814617-A.

XX PD 29-SEP-1998.

XX PP 07-OCT-1994; 94US-00319704.

XX PR 07-OCT-1994; 94US-00319704.

XX PA (USNA) US SEC OF NAVY.

XX PI Doolan DL, Charoenvit V, Hoffman SL, Hedstrom RC;

XX DR WPI; 1998-541794/46.

XX Vaccine for protecting mammal against infection by malaria caused by
 PT Plasmodium species - comprises a first nucleic acid encoding a first
 PT polypeptide capable of eliciting an immune reaction against an antigen
 PT expressed during the liver.

XX PS Disclosure; Col 12; 24pp; English.

XX AAW71321-22 represent universal helper T-cell epitopes derived from
 CC tetanus toxin. They are used to enhance host immune response to vaccines.
 CC The specification describes a Plasmodium yoelii liver stage 17 kDa
 CC hepatic and erythrocytic stage protein designated PyHEP17. This protein
 CC elicits a response from an Igl monoclonal antibody designated Navy Yoelii
 CC Liver Stage 3 (NYLS3). This antibody does not recognise sporozoites, but
 CC does recognise P. yoelii liver stage parasites. NYLS3 eliminates upto 90%
 CC of liver stage parasites. The specification describes a vaccine for
 CC reducing the severity or incidence of infection by a malaria parasite of
 CC the genus Plasmodium. The DNA vaccine comprises exon 1 and part of exon 2
 CC of the PyHEP17 gene

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYKANSKFIGITEL 15

RESULT 6
AAW67033
ID AAW67033 standard; peptide; 15 AA.
XX
AC AAW67033;
XX
XX 15-DEC-1998 (first entry)
XX
XX Tetanus toxin fragment (residues 830-844).
XX
XX Tetanus toxin; vaccine; antibody; carbohydrate peptide conjugate;
KW dendrimeric poly-lysine; epitope; tumour.
XX
XX Clostridium tetani.
XX
XX WO9843677-A1.
XX
XX 08-OCT-1998.
XX
XX 27-MAR-1998; 98WO-EP001922.
XX
XX 27-MAR-1997; 97US-0041726P.
XX
XX (INSP) INST PASTEUR.
XX
XX Bay S, Cantacuzene D, Leclerc C, Lo-Man R;
PI
XX
XX WPI; 1998-557071/47.
XX
XX Carbohydrate peptide conjugate used as vaccine - comprises carrier with
PT dendrimeric poly-lysine enabling multiple epitopes to be covalently
PT attached.
XX
XX Disclosure; Page 13; 55pp; English.
XX
XX The invention relates to a new carbohydrate peptide conjugate, which
CC comprises a carrier with a dendrimeric poly-lysine enabling multiple
CC epitopes to be covalently attached to it. Also claimed are: (1) an
CC antibody purified from biological fluid or cells of organisms
CC administered with the carbohydrate peptide conjugate, and (2) a diagnosis
CC kit comprising antigen-specific antibodies elicited by immunisation with
CC the carbohydrate peptide conjugate. The peptide conjugate, antibody and
CC diagnosis kit are used to provide pharmaceutical compositions and
CC vaccines against tumours. These can be used to support an immune response
CC against viral infections caused by hepatitis virus, HIV or cytomegalo
CC virus. They can be used to enhance immune responses, especially B- and T-
CC cell responses, of humans and animals against bacterial infections. The
CC carbohydrate peptide conjugate stimulates the antibody and T-cell
CC response without stimulating undesired immune responses. The composition
CC is capable of increasing the survival of tumour bearing humans and
CC animals. The present sequence corresponds to residues 830-844 of tetanus
CC toxin. The synthetic peptide corresponding to this sequence may be used
CC as an epitope in a carbohydrate peptide conjugate
XX
XX Sequence 15 AA;
Query Match 100.0%; Score 74; DB 2; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYKANSKFIGITEL 15
DB 1 QYKANSKFIGITEL 15
RESULT 7
AAW67578
ID AAW67578 standard; peptide; 15 AA.
XX
XX AAW67578;
AC

XX 02-MAR-1999 (first entry)
DT
XX
DE T-cell epitope peptide #4 for chimeric fimbria/T-cell epitope peptide.
XX
KW Chimeric; non-typable Haemophilus influenzae; fimbria; T-cell epitope;
KW immunogenic composition; immune response.
XX
OS Synthetic.
XX
XX US5843464-A.
XX
XX 01-DEC-1998.
XX
XX 02-JUN-1995; 95US-00460502.
XX
XX 02-JUN-1995; 95US-00460502.
XX
XX (OHIS) UNIV OHIO STATE.
XX
XX Kaumaya PTP, Bakaletz LO;
XX
XX WPI; 1999-044514/04.
XX
XX Synthetic chimeric fimbria peptide - useful for vaccination against non-
PT typable Haemophilus influenzae.
XX
XX Disclosure; Col 4; 16pp; English.
XX
XX The invention relates to the manufacture of a synthetic chimeric peptide
CC comprising a non-typable Haemophilus influenzae fimbria peptide fused via
CC a linker peptide to a T-cell epitope peptide. The chimeric peptide is
CC used in immunogenic compositions which induce an immune response against
CC non-typable Haemophilus influenzae. This sequence represents an example
CC of a T-cell epitope peptide used to generate the chimeric peptide
XX
XX Sequence 15 AA;
Query Match 100.0%; Score 74; DB 2; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYKANSKFIGITEL 15
DB 1 QYKANSKFIGITEL 15
RESULT 8
AAW04051
ID AAW04051 standard; peptide; 15 AA.
XX
AC AAW04051;
XX
XX 04-JAN-2000 (first entry)
DT
XX
DE T-Helper epitope from tetanus toxoid.
XX
KW Covalently reactive antigen analog; CRAA; catalytic antibody;
KW electrophilic reaction centre; phosphonate; boronate; vaccine;
KW transition state analog; TSA; isostere; gp120; HIV-1; T-helper; tetanus;
KW toxoid; B-T-epitope.
XX
OS Clostridium tetani.
XX
XX WO9948925-A1.
XX
XX 30-SEP-1999.
XX
XX 23-MAR-1999; 99WO-US006325.
XX
XX 23-MAR-1998; 98US-00046373.
XX
XX (UYNE-) UNIV NEBRASKA.

XX Paul S, Gololobov G, Smith L;
 PI WPI; 1999-591076/50.
 XX
 DR
 XX
 PT New covalently reactive antigen analogs used for treating e.g. autoimmune
 PT diseases, lymphoproliferative disorders, cancers, microbial infections,
 PT ischemic and reperfusion injury or septic shock.
 PT
 XX
 PS Disclosure; Page 86; 158pp; English.
 XX
 CC The patent discloses new covalently reactive antigen analogs (CRAA) of
 CC formula X1-Y-E-X2, in which X1 and X2 represent peptide sequences of an
 CC epitope of a disease-associated protein, Y is a positively charged amino
 CC acid residue, preferably Lys or Arg, and E is an electrophilic reaction
 CC centre, preferably a phosphonate or boronate moiety. Depending on the
 CC identity of the epitope, the CRAA may be used to stimulate production of
 CC catalytic antibodies specific for predetermined antigens associated with
 CC particular medical disorders. They may also be used to permanently
 CC inactivate endogenously produced catalytic antibodies produced in certain
 CC autoimmune diseases as well as in certain lymphoproliferative disorders.
 CC Amongst the specifically exemplified CRAAs is one based on residues 421-
 CC 436 of a B-cell epitope of gp120 (see AAY04046) which may be used to
 CC counter HIV-1 infections. When used as an immunogen, preferably this CRAA
 CC is conjugated at its N-terminal to a T-helper epitope from tetanus
 CC toxoid. The present sequence represents the T-helper epitope and
 CC corresponds to residues 830-844 of the toxoid
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15
 RESULT 9
 AAW73220
 ID AAW73220 standard; protein; 15 AA.
 XX
 AC AAW73220;
 XX
 DT 25-JAN-1999 (first entry)
 XX
 DE Tetanus toxoid epitope.
 XX
 KW Multispecific single chain antibody; antibody H22; tumour cell; therapy;
 KW antibody-dependent cellular cytotoxicity; ADCC; HER 2/neu; infection;
 KW epidermal growth factor receptor; breast cancer; ovarian cancer.
 XX
 OS Synthetic.
 XX
 PN US5837243-A.
 XX
 PD 17-NOV-1998.
 XX
 PF 07-JUN-1996; 96US-00661052.
 XX
 PR 07-JUN-1995; 95US-00484172.
 XX
 PA (MEDA-) MEDAREX INC.
 XX
 PI Somasundaram C, Graziano R, Deo YM, Goldstein J;
 DR WPI; 1999-023374/02.
 XX
 XX Specific killing of tumour cells - using a multi-specific molecule
 PT comprising an anti-Fc receptor antibody and a portion which binds to a
 PT target cell.
 XX

PS Example 7; Col 27; 57pp; English.
 XX
 CC This sequence represents a tetanus toxoid epitope and is recognised by
 CC the multispecific single chain antibody designated H22. The antibody can
 CC be used in the method of the invention for inducing antibody-dependent
 CC cellular cytotoxicity (ADCC) against a tumour cell which is characterised
 CC by overexpression of HER 2/neu or epidermal growth factor receptor
 CC (EGFR), comprises contacting the tumour cell with a multispecific protein
 CC molecule (preferably a single chain antibody) comprising: (a) an anti-Fc
 CC receptor antibody or an antigen binding fragment; (b) a portion which
 CC binds to HER 2/neu; and (c) a portion which binds to EGFR. The method can
 CC be used for treating cancers especially breast cancer or ovarian cancer.
 CC The multispecific antibody can also be administered prophylactically to
 CC vaccinate a subject against infection by a target cell
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15
 RESULT 10
 AAY92625
 ID AAY92625 standard; protein; 15 AA.
 XX
 AC AAY92625;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Foreign epitope P2.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; PSM; Her2;
 KW Heregulin 2; Fibroblast growth factor 8b; FGF8b; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 OS Clostridium tetani.
 XX
 PN WO200020027-A2.
 XX
 PD 13-APR-2000.
 XX
 PF 05-OCT-1999; 99WO-DK0000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (WEBI-) M & B BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 DR N-PSDB; AAA09460.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page 213; 220pp; English.
 XX
 CC The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, human prostate
 CC specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast
 CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
 CC presentation by antigen producing cells (APCs) of the animals immune
 CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 CC the PA and/or at least 1 B-cell group derived from the cell-associated PA

CC ; and (2) at least 1 first T helper cell group which is foreign to the
 CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 CC comprising a substantial part of all known and predicted CTL and B-cell
 CC epitopes of the respective PA and including at least one foreign T helper
 CC epitope (e.g. P2 and/or P30) are also claimed. The method is used to
 CC treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15

RESULT 11
 AAY70300
 ID AAY70300 standard; peptide; 15 AA.

AC AAY70300;

DT 06-JUN-2000 (first entry)

DE Clostridium tetani tetanus toxoid T-cell epitope, P589.

XX Recombinant protein; CDC/NIIMALVAC-1; multivalent; malaria; vaccine;
 KW T-cell epitope; tetanus toxoid; antigenic epitope; treatment;
 KW circumsporozoite protein; CSP; sporozoite surface protein-2; SSP-2;
 KW liver stage antigen-1; LSA-1; merozoite surface protein-1; MSP-1; MSP-2;
 KW apical membrane antigen-1; AMA-1; erythrocyte binding antigen-175;
 KW EBA-175; rhoptry associated protein-1; RAP-1; gamete specific antigen;
 KW Pf27; antiparasitic; prevention; anti-CDC/NIIMALVAC-1 antibody.

OS Clostridium tetani.

PN WO200011179-A1.

PD 02-MAR-2000.

PF 19-AUG-1999; 99WO-US018869.

PR 21-AUG-1998; 98US-0097703P.

PA (NAIM-) NAT INST IMMUNOLOGY.
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

PI Lal AA, Shi YP, Hasnain SE;

XX WPI; 2000-237654/20.

DR Novel recombinant protein as vaccine for treating malarial infection
 PT comprises antigenic peptides obtained from different stages of plasmodium
 PT falciparum life cycle.

PS Claim 2; Page 17; 52pp; English.

XX The present sequence is the tetanus toxoid T-cell epitope P589, derived
 CC from Clostridium tetani. It is used in the construction of recombinant
 CC protein CDC/NIIMALVAC-1, which is a multivalent, multistage malarial
 CC vaccine. The recombinant protein comprises, melitin signal peptide,
 CC (His)6 tag, T-cell epitope from tetanus toxoid and 21 antigenic epitopes
 CC from circumsporozoite protein (CSP), sporozoite surface protein-2 (SSP-
 CC 2), liver stage antigen-1 (LSA-1), merozoite surface protein-1 (MSP-1),
 CC MSP-2, apical membrane antigen-1 (AMA-1), erythrocyte binding antigen-175
 CC (EBA-175), rhoptry associated protein-1 (RAP-1) and gamete specific
 CC antigen, Pf27. These epitopes were obtained at different stages of the
 CC life cycle of P. falciparum. CDC/NIIMALVAC-1 vaccine has antiparasitic
 CC activity and can be used for treatment and prevention of malarial
 CC infections. Anti-CDC/NIIMALVAC-1 antibodies can be used for detecting P.

CC falciparum in biological samples

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15

RESULT 12
 AAY84427
 ID AAY84427 standard; peptide; 15 AA.

AC AAY84427;

DT 25-JUL-2000 (first entry)

DE Amino acid sequence of the tetanus toxoid P2 epitope.

XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSP-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; tetanus toxoid P2 epitope.

OS Clostridium tetani.

PN WO200015807-A1.

PD 23-MAR-2000.

PF 13-SEP-1999; 99WO-DK000481.

PR 15-SEP-1998; 98DK-00001164.

PR 02-OCT-1998; 98US-0102896P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Haaning J;

XX WPI; 2000-271444/23.

PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 treat, prevent and ameliorate osteoporosis.

PS Example; Page 106; 110pp; English.

XX The present sequence represents the tetanus toxoid P2 epitope. It is used
 CC to create a fusion protein with murine osteoprotegerin ligand (OPGL).
 CC Osteoprotegerin is a secreted member of the tumour necrosis factor
 CC receptor family, which blocks osteoclastogenesis in a dose dependent
 CC manner. The OPGL protein is synthesised as a type II transmembrane
 CC protein. The murine and human OPGL polypeptides are 87% homologous. OPGL
 CC is a potent osteoclast differentiation factor when combined with CSP-1.
 CC It is not capable of inducing osteoclast differentiation in the absence
 CC of CSP-1. OPGL is also an activator of mature osteoclasts. The
 CC specification describes a method for the in vivo down-regulation of OPGL
 CC activity in an animal. The method comprises using at least one OPGL
 CC polypeptide or subsequence, and/or at least one OPGL analogue to induce
 CC an immune response in the animal. The method and OPGL polypeptide are
 CC useful for treating, preventing and ameliorating osteoporosis or other
 CC diseases or conditions characterised by excessive bone resorption

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 13
 AAY82637
 ID AAY82637 standard; peptide; 15 AA.
 XX
 AC AAY82637;
 XX
 DT 07-AUG-2000 (first entry)
 XX
 DE Tetanus toxoid T cell epitope peptide SEQ ID NO:13.
 XX
 KW T cell epitope; B cell epitope; allergy; allergen; antigenic;
 KW antiallergic; antiasthmatic; antiinflammatory; dermatological;
 KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
 KW atopic dermatitis; acute urticaria; chronic urticaria;
 KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
 KW anaphylactic reaction; drug hypersensitivity; allergic reaction.
 XX
 OS Clostridium tetani.
 OS Synthetic.
 XX
 PN WO200006694-A2.
 XX
 PD 10-FEB-2000.
 XX
 PF 20-JUL-1999; 99WO-BE000092.
 XX
 PR 30-JUL-1998; 98EP-00870167.
 XX
 PA (UNIO) UCB SA.
 XX
 PI Saint-Remy J, Jacquemin M;
 XX
 DR WPI; 2000-422470/36.
 XX
 PT New compound for prevention and treatment of allergies comprises at least
 PT one allergen antigenic determinant recognized by a B cell and at least
 PT one antigenic determinant which does not trigger T cell activation.
 XX
 PS Example 6; Page 30; 50pp; English.
 XX
 CC The present invention describes a compound (I) for the prevention and/or
 CC treatment of allergy. The compound comprises at least one allergen
 CC antigenic determinant (i) recognised by a B cell or an antibody secreted
 CC by a B cell of a non-atopic individual and at least one antigenic
 CC determinant (ii) different from the allergen that triggers T cell
 CC activation. (I) has antiallergic, antiasthmatic, antiinflammatory,
 CC dermatological and immunosuppressive activities, and can be used in a
 CC vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
 CC treat and/or prevent allergies or a disease of allergic origin,
 CC especially hypersensitivities. These include rhinitis, sinusitis,
 CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
 CC urticaria, gastro-intestinal syndromes associated with the ingestion of
 CC food allergens, oro-pharyngeal syndrome, anaphylactic reactions
 CC associated with drug hypersensitivities and/or a mixture of these. The
 CC use of (I) in the treatment of allergic conditions avoids the need for
 CC drug treatment, which often causes undesirable side-effects. Also, prior
 CC art drug therapies alleviate symptoms, but do not influence their causes,
 CC however (I) actually combats the cause of an allergic reaction. The
 CC present sequence represents a peptide, which is used in an example from
 CC the present invention
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 14
 AAY44763
 ID AAY44763 standard; peptide; 15 AA.
 XX
 AC AAY44763;
 XX
 DT 04-MAY-2000 (first entry)
 XX
 DE Tetanus toxoid protein derived T-cell activating epitope P2.
 XX
 KW Surface layer protein; S-layer secretion signal; antibiotic; vaccine;
 KW recombinant fusion protein cleavage; enzyme; protein polymer; foodstuff;
 KW antibacterial enzyme; surface glycoprotein; T-cell activating epitope;
 KW P2; tetanus toxoid; IPNV; Infectious pancreatic necrosis virus.
 XX
 OS Clostridium tetani.
 XX
 PN WO200004170-A1.
 XX
 PD 27-JAN-2000.
 XX
 PF 14-JUL-1999; 99WO-CA000637.
 XX
 PR 14-JUL-1998; 98CA-02237704.
 XX
 PA (UYBR-) UNIV BRITISH COLUMBIA.
 XX
 PI Smit J;
 XX
 DR WPI; 2000-182434/16.
 XX
 PT Cleavage of Caulobacter produced recombinant fusion proteins useful for
 PT producing vaccine peptides.
 XX
 PS Example 2; Page 16; 33pp; English.
 XX
 CC The patent discloses a method for cleaving a recombinant fusion protein
 CC which is produced by Caulobacter and consists of Caulobacter surface
 CC layer (S-layer) protein (containing the C-terminal secretion signal) and
 CC a target protein heterologous to Caulobacter. The cleavage of target
 CC protein from the S-layer protein is carried out under mild acid
 CC conditions so that cleavage occurs at aspartate-proline dipeptide site
 CC without solubilising the protein. The cleavage is accomplished while the
 CC fusion protein is in an insoluble aggregate form which facilitates
 CC purification of the protein. The method is useful for producing pure
 CC proteins including recombinant human and animal therapeutic antibiotic
 CC and vaccine peptides, enzymes, protein polymers, and antibacterial
 CC enzymes for foodstuffs. The present sequence is a T-cell activating
 CC epitope P2 derived from tetanus toxoid protein. This sequence was fused
 CC to a DNA encoding a fragment of infectious pancreatic necrosis virus
 CC surface glycoprotein which is a vaccine candidate. This chimeric protein
 CC was in turn fused to DNA encoding C. crescentus S-layer secretion signal
 CC (corresponds to the C-terminal portion of the S-layer protein from amino
 CC acid 690 onwards and contains native Asp-Pro site) for construction of a
 CC recombinant fusion construct which is expressed in Caulobacter and then
 CC cleaved to recover the vaccine candidate protein
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||

RESULT 15
 AAB45511

ID AAB45511 standard; protein; 15 AA.
 XX
 AC AAB45511;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Tetanus P2 epitope SEQ ID NO: 23.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Clostridium tetani.
 XX
 PN WO200065058-A1.
 XX
 XX 02-NOV-2000.
 XX
 PD 19-APR-2000; 2000WO-DK000205.
 XX
 PF 23-APR-1999; 99DK-00000552.
 XX
 PR 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 PI Klysner S;
 XX
 XX WPI; 2000-672791/65.
 DR
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 1; Page 137; 172pp; English.
 PS
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 16
 AAE11763
 ID AAE11763 standard; peptide; 15 AA.
 XX
 AC AAE11763;
 XX
 DT 18-DEC-2001 (first entry)
 XX
 DE Clostridium tetani P2 epitope.
 XX
 KW Amyloid protein; neuroprotective; nootropic; immunostimulant; vaccine;
 KW Alzheimer's disease; anticonvulsant; gene therapy; Pick's disease;
 KW antidiabetic; systemic amyloidosis; maturity onset diabetes; ALS;
 KW amyotrophic lateral sclerosis; Parkinson's disease; encephalopathy;
 KW Huntington's disease; fronto-temporal dementia; P2 epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO200162284-A2.
 XX

30-AUG-2001.
 XX
 PD 19-FEB-2001; 2001WO-DK000113.
 PF
 XX 21-FEB-2000; 2000DK-00000265.
 XX
 PR 01-MAR-2000; 2000US-0186295P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 PI Birk P, Jensen MR, Nielsen KG;
 XX
 XX WPI; 2001-589796/66.
 DR
 DR N-PSDB; AAD18755.
 XX
 XX In vivo down-regulation of amyloid protein for the treatment of
 PT Alzheimer's, comprises presenting an amyloidogenic polypeptide or its
 PT subsequence and/or at least one analogue of the amyloidogenic polypeptide
 PT to the immune system.
 XX
 XX Example 3; Page 117; 120pp; English.
 PS
 XX The invention relates to a method for in vivo down-regulation of amyloid
 CC protein such as beta amyloid (Abeta) in an animal, including human. The
 CC method comprising presenting to the animal's immune system an
 CC immunogenically effective amount of at least one amyloidogenic protein or
 CC its subsequence and/or at least one analogue of the amyloidogenic
 CC polypeptide. The amyloidogenic protein or its subsequence, and its
 CC analogue is useful for the preparation of an immunogenic composition
 CC comprising an adjuvant for down-regulating amyloid in an animal. They are
 CC also useful in the treatment, prophylaxis or amelioration of Alzheimer's
 CC disease or other diseases characterised by amyloid deposits. They are
 CC also useful in the treatment of systemic amyloidosis, maturity onset
 CC diabetes, Parkinson's disease, Huntington's disease, fronto-temporal
 CC dementia, amyotrophic lateral sclerosis (ALS), Pick's disease and prion-
 CC related transmissible spongiform encephalopathies. They are also useful
 CC for inducing production of antibodies against an amyloidogenic
 CC polypeptide. The present sequence is Clostridium tetani P2 epitope
 CC related to the invention
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 17
 AAB49071
 ID AAB49071 standard; peptide; 15 AA.
 XX
 AC AAB49071;
 XX
 XX 27-MAR-2001 (first entry)
 DT
 XX Tetanus toxoid TT830-844 T-cell epitope, SEQ ID NO:7.
 DE
 XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW carrier protein; universal T-cell epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072876-A2.
 XX

PD 07-DEC-2000.
 XX
 PF 01-JUN-2000; 2000WO-US015239.
 XX
 PR 01-JUN-1999; 99US-0137010P.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB;
 XX
 DR WPI; 2001-070921/08.
 XX
 DR
 XX
 PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.
 XX
 XX
 XX Disclosure; Page 43; 140pp; English.
 XX
 XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (Trk); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents a universal T-cell epitope which may be used as a carrier for
 CC an epitope derived from an amyloid plaque component in a composition of
 CC the invention
 XX
 XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 18
 AAM99515
 ID AAM99515 standard; peptide; 15 AA.
 XX
 AC AAM99515;

DT 07-DEC-2001 (first entry)
 XX
 DE Vaccine related MHC ligand peptide SEQ ID NO:618.
 XX

KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
 KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
 KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
 KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
 KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
 KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;

KW human immunodeficiency virus.
 XX
 OS Clostridium tetani.
 XX
 PN WO200170772-A2.
 XX
 PD 27-SEP-2001.
 XX
 XX
 PF 22-MAR-2001; 2001WO-FR000872.
 XX
 PR 23-MAR-2000; 2000FR-00003711.
 XX
 PA (FABR) FABRE MEDICAMENT SA PIERRE.
 XX
 PI Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;
 XX
 DR WPI; 2001-611470/70.
 XX
 XX Stabilized pharmaceutical containing N-terminal glutamic acid or
 PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
 PT with strong acid.
 XX
 PS Claim 9; Page 136; 149pp; French.

XX The present invention describes a pharmaceutical compound (I) that
 CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
 CC the form of an addition salt with a strong, physiologically acceptable
 CC acid (II). Also described are: (a) a pharmaceutical composition
 CC containing at least one (I); (b) a vaccine containing at least one (I)
 CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
 CC method for in vitro diagnosis of diseases associated with the presence of
 CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
 CC for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
 CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
 CC cytostatic activities. (I) are useful, in human or veterinary medicine,
 CC in pharmaceutical compositions (for treating immune disorders, e.g.
 CC immune deficiency, autoimmune states, hypersensitivity, allergy, graft
 CC rejection, infection, hormonal disorders and central nervous system
 CC diseases), also, where (I) is a MHC ligand (Ia); in vaccines for
 CC treatment or prevention of: (i) viral, bacterial, parasitic or fungal
 CC infections; or (ii) of cancers. A particular application is in anti-
 CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
 CC associated with interactions between MHC and (I), e.g. melanoma and human
 CC immunodeficiency virus infection. AAM98898 to AAM99592 represent peptides
 CC which can be used in pharmaceutical compounds from the present invention
 XX
 XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 19
 AAB46172
 ID AAB46172 standard; peptide; 15 AA.
 XX
 AC AAB46172;

DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid TT830-844 epitope.
 XX

KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW P_c receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX

CC inducing effector cell killing of tumour cells. The molecules can be used
CC to treat or prevent viral, protozoal, or fungal infections, or autoimmune
CC diseases such as immune thrombocytopenia purpura and systemic lupus
CC erythematosus. The present sequence represents a wild-type tetanus toxoid
CC epitope TT830
XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 22

AAB20143
ID AAB20143 standard; peptide; 15 AA.

XX

AC AAB20143;

DT 30-APR-2001 (first entry)

DE Tetanus toxin T-cell epitope P2.

KW Tetanus toxin; T-cell epitope; growth differentiation factor 8; GDF-8;
KW myostatin; down-regulation; vaccine; muscle; meat; cachexia; cardiant.
XX

OS Clostridium tetani.

PN WO200105820-A2.

PD 25-JAN-2001.

PF 20-JUL-2000; 2000WO-DK000413.

PR 20-JUL-1999; 99DK-00001014.

PR 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
PT through induction of anti-GDF-8 antibody production.

XX Disclosure; Page 95; 110pp; English.

XX The present sequence is that of the promiscuous tetanus toxic T-cell
CC epitope P2. It is an object of the invention to produce a recombinant
CC therapeutic vaccine capable of effecting down-regulation of growth
CC differentiation factor 8 (GDF-8) in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20143-53) are provided
CC that are capable of breaking autotolerance against autologous GDF-8.
CC These comprise the C-terminal portion of human GDF-8 in which a portion
CC of the native sequence is replaced by a T-cell epitope such as the
CC promiscuous tetanus toxin T-cell epitope P2 or P30. The high number of
CC Cys residues in the C-terminal region limits the possible sites in which
CC the T-cell epitope can be positioned without major disturbance of the
CC native 3-dimensional structure of the protein. Nucleic acids encoding the
CC GDF-8 variants can be used for genetic immunisation of the animals. Down-
CC regulation of GDF-8 activity can increase muscle mass by up to at least
CC 45% in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure

XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 1 QYIKANSKFIGITEL 15

RESULT 23

AAB85451
ID AAB85451 standard; peptide; 15 AA.

XX

AC AAB85451;

DT 25-SEP-2001 (first entry)

DE Wild-type TT830 (tetanus toxin) epitope.

XX HER 2/neu; epidermal growth factor receptor; EGFR; multispecific protein;
KW Fc receptor; FcR; tumor cell; breast; cancer; sarcoma; carcinoma; HIV;
KW pathogenic; Toxoplasma gondii; candidiasis; systemic lupus; cytostatic;
KW immune thrombocytopenia purpura; immunosuppressive; antiviral;
KW antifungal; antiprotozoal; TT830; tetanus toxin.
XX

OS Clostridium tetani.

XX US6270765-B1.

PN 07-AUG-2001.

PF 06-NOV-1998; 98US-00188082.

XX 07-JUN-1995; 95US-00484172.

PR 07-JUN-1996; 96US-00661052.

XX (MEDA-) MEDAREX INC.

XX Deo YM, Goldstein J, Graziano R, Somasundaram C;

XX WPI; 2001-475189/51.

DR N-PSDB; AAH23378.

XX Inducing killing of tumor cells which expresses HER 2/neu or epidermal
PT growth factor receptor (EGFR) by contacting the cell with multispecific
PT proteins comprising an anti-Fc receptor, -Her 2/neu or -EGFR antibody,
PT useful for treating cancer.

XX Example 7; Fig 24; 57pp; English.

XX The invention relates to a new method for inducing killing of a tumor
CC cell which expresses HER 2/neu or epidermal growth factor receptor
CC (EGFR). The method comprises contacting the tumor cell with a
CC multispecific protein comprising a component, preferably an antibody,
CC which binds to an Fc receptor (FcR), Her 2/neu or EGFR. The method is
CC useful for inducing killing of a tumor cell from breast cancer, sarcoma,
CC carcinoma, or ovarian cancer. Specific multispecific proteins can also be
CC administered to a subject to treat or prevent other diseases or
CC conditions, including pathogenic infections (e.g., viral (such as HIV)),
CC protozoan infections (such as Toxoplasma gondii), fungal infections (such
CC as candidiasis), and an autoimmune (e.g. immune thrombocytopenia
CC purpura and systemic lupus). The present sequence represents a wild-type
CC tetanus toxin TT830 epitope

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15


```

Db      1 QYIKANSKFIGITEL 15
|||||
RESULT 24
AAB85701
ID      AAB85701 standard; peptide; 15 AA.
XX
XX      AAB85701;
AC
XX
XX      29-OCT-2001 (first entry)
DT
XX
XX      Amino acid sequence of P2 epitope.
DE
XX
XX      Multivalent protein; immune response; Plasmodium vivax; parasite;
KW      protozoa; vaccine; malaria; recombinant; ViVac1; ViVac2.
KW
XX
XX      Plasmodium vivax.
OS
XX
XX      WO200155181-A2.
FN
XX
XX      02-AUG-2001.
PD
XX
XX      29-JAN-2001; 2001WO-US002937.
PF
XX
XX      31-JAN-2000; 2000US-0179213P.
PR
XX
XX      (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX
XX      Lal AA, Xiao L, Zhou Z;
PI
XX
XX      WPI; 2001-514557/56.
DR
XX
XX      New recombinant multivalent protein comprising antigenic determinants
PT      derived from more than one stage in a life cycle of Plasmodium vivax,
PT      useful as a vaccine for treating, preventing and reducing malarial
PT      infection.
XX
XX      Example 1; Page 25; 59pp; English.
PS
XX
XX      The invention relates to recombinant multivalent proteins (I) that
CC      stimulate an immune response to Plasmodium vivax. (I) comprises antigenic
CC      determinants, fragments or conservative substitutions, derived from more
CC      than one stage in a life cycle of a Plasmodium vivax parasite. (I) is
CC      useful as a vaccine for stimulating an immune response, specifically a
CC      protective immune response that confers increased resistance to infection
CC      by Plasmodium parasites, such as P. vivax. (I) is especially useful in
CC      the treatment, prevention and reduction of malarial infection, as
CC      research or diagnostic reagents for the detection of Plasmodium species
CC      in a biological sample, and for conferring immunity against multiple
CC      stages of the malarial parasite. The antibodies produced are useful for
CC      the detection or measurement of antigenic epitopes derived from one or
CC      more stages in a life cycle of a parasite, particularly P. vivax. The
CC      vaccine comprising the recombinant proteins, is cost-effective, health-
CC      promoting intervention for controlling, preventing or treating the
CC      incidence of malaria. The present sequence represents the amino acid
CC      sequence of a P2 epitope, a component of the multivalent and multistage
CC      proteins ViVac1 and ViVac2p
XX
XX      Sequence 15 AA;
SQ
Query Match      100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy      1 QYIKANSKFIGITEL 15
|||||
Db      1 QYIKANSKFIGITEL 15
|||||
RESULT 25
AAU97872
ID      AAU97872 standard; peptide; 15 AA.

```

```

XX
XX      AAU97872;
AC
XX
XX      12-AUG-2002 (first entry)
DT
XX
XX      Tetanus toxin P2 (tt P2) T cell epitope.
DE
XX
XX      Outer surface lipoprotein; OspA; antibacterial; immunosuppressive;
KW      vaccine; poikilothermic fish; fin-fish; Rickettsial septicemia;
KW      Rickettsial disease; tetanus toxin P2; tt P2; T cell epitope.
XX
XX      Clostridium tetani.
OS
XX
XX      CA2339327-A1.
PN
XX
XX      15-MAR-2002.
PD
XX
XX      19-MAR-2001; 2001CA-02339327.
PF
XX
XX      15-SEP-2000; 2000US-00677374.
PR
XX
XX      (THOR/) THORNTON J C.
PA      (KAYW/) KAY W W.
PA      (BURI/) BURIAN J.
PA      (KUZY/) KUZYS M A.
XX
XX      Thornton JC, Kay WW, Burian J, Kuzyk MA;
PI
XX
XX      WPI; 2002-455221/49.
DR
XX
XX      N-PSDB; ABKS2412.
DR
XX
XX      Inducing immunity in fin fish to Rickettsial septicemia, comprises
PT      administration of an outer surface lipoprotein (OspA) of a bacterial
PT      strain, as a vaccine.
XX
XX      Disclosure; Fig 8; 55pp; English.
PS
XX
XX      The invention describes a method of protecting a poikilothermic fish
CC      against infection by the bacterial pathogen Piscirickettsia salmonis
CC      comprising administering either intraperitoneally, by immersion or
CC      orally, an immunogenic amount of principal antigen, the OspA (outer
CC      surface lipoprotein), its variants, non-lipidated form or antigenic
CC      peptides derived or synthesized with or without an adjuvant. The new
CC      method is used to provide an outer surface lipoprotein (OspA) of
CC      bacterial strain Piscirickettsia salmonis as a vaccine to induce immunity
CC      in fin-fish against Rickettsial septicemia and other related
CC      Rickettsial diseases caused by either a virus, bacteria or parasite.
CC      This is the amino acid sequence of a Clostridium tetani tetanus toxin P2
CC      (tt P2) T cell epitope that can be fused to the Escherichia coli codon
CC      optimised OspA creating a promiscuous T cell epitope for use in creating
CC      the vaccine described in the invention
XX
XX      Sequence 15 AA;
SQ
Query Match      100.0%; Score 74; DB 5; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy      1 QYIKANSKFIGITEL 15
|||||
Db      1 QYIKANSKFIGITEL 15
|||||
RESULT 26
ABG31774
ID      ABG31774 standard; peptide; 15 AA.
XX
XX      ABG31774;
AC
XX
XX      03-DEC-2002 (first entry)
DT
XX
XX      T helper cell epitope #1.
DE
XX
XX

```

KW Immunogen; B-cell epitope; cytotoxic T lymphocyte; CTL; TH epitope;
 KW T helper cell epitope; virtual lymph node device.
 XX
 XX Clostridium tetani.
 XX WO20026056-A2.
 XX
 XX 29-AUG-2002.
 PD
 XX
 XX 19-FEB-2002; 2002WO-DK000112.
 PF
 XX
 XX 19-FEB-2001; 2001WO-DK000113.
 PR
 XX 20-FEB-2001; 2001US-00785215.
 PR
 XX 20-AUG-2001; 2001DK-00001231.
 PR
 XX 22-OCT-2001; 2001US-0337543P.
 PR
 XX (PHAR-) PHARMEXA AS.
 PA
 XX
 XX
 XX Nielsen KG, Koefoed P;
 XX
 XX WPI; 2002-706932/76.
 DR
 XX
 XX Novel immunogen useful for immunizing an animal, has an activated
 PT polyhydroxypolymer backbone to which is attached an antigenic determinant
 PT including a B cell epitope and another determinant including a T-helper
 PT epitope.
 PT
 XX
 XX Example 1; Page 51; 52pp; English.
 PS
 XX The invention relates to an immunogen comprising at least one first
 CC antigenic determinant that includes at least one B-cell epitope and/or at
 CC least one cytotoxic T lymphocyte (CTL) epitope, and at least one second
 CC antigenic determinant that includes a T helper cell epitope (TH epitope),
 CC where each of the first and second antigenic determinants are coupled to
 CC an activated polyhydroxypolymer carrier. The invention also relates to an
 CC immunogenic composition for raising an immune response against an antigen
 CC in a mammal, including a human. The immunogen or immunogenic composition
 CC contained in a virtual lymph node (VLN) device is useful for immunising
 CC an animal, including a human, against an antigen of choice, where the
 CC antigen shares at least one first antigenic determinant with the
 CC immunogen. This sequence represents a T helper cell epitope used in
 CC synthesis of an immunogen of the invention
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 5; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 27
 ABG72721
 ID ABG72721 standard; peptide; 15 AA.
 AC
 XX ABG72721;
 XX
 XX 14-FEB-2003 (first entry)
 DT
 XX Tetanus toxin immunogenic T epitope.
 DE
 XX Covalently reactive transition state antigen analogue; CRTSA; epitope;
 KW antigen; electrophilic covalently reactive centre; catalytic antibody;
 KW antibody; autoimmune disease; autoimmune thyroiditis; asthma;
 KW systemic lupus erythematosus; rheumatoid arthritis; Reiter's syndrome;
 KW mixed connective disease; Sjogren's syndrome; vasculitis;
 KW bird shot retinopathy; lymphoproliferative disorder; myeloma; leukaemia;
 KW lymphoma; macroglobulinaemia; vaccine; immunisation; infection;
 KW dermatological; septic shock; systemic inflammatory disease;
 KW acute respiratory distress syndrome; neoplastic disease; HIV; AIDS;

KW human immunodeficiency virus; acquired immunodeficiency syndrome; gp120;
 KW immunogenic; immunosuppressive; tetanus toxin.
 XX
 XX Clostridium tetani.
 XX WO200279223-A2.
 XX
 XX 10-OCT-2002.
 PD
 XX
 XX 01-APR-2002; 2002WO-US010116.
 PF
 XX
 XX 31-MAR-2001; 2001US-0280624P.
 PR
 XX (TEXA) UNIV TEXAS SYSTEM.
 PA
 XX Paul S, Nishiyama Y;
 PI
 XX WPI; 2003-040645/03.
 DR
 XX Novel covalently reactive transition state antigen analog useful for
 PT stimulating production of catalytic antibodies, and actively immunizing
 PT patient against particular pathogen to generate protective immunity.
 PT
 XX Disclosure; Page 20; 87pp; English.
 PS
 XX The invention discloses a covalently reactive transition state antigen
 CC analogue (CRTSA), comprising a peptide sequence of an epitope of a target
 CC protein antigen (R₁), an electrophilic covalently reactive centre
 CC bearing a partial or full negative charge (E) and an electron withdrawing
 CC or electron donating substituent (R₂), which can optionally further
 CC comprise a flanking peptide sequence. The CRTSA is useful for treating a
 CC disease state in a patient by irreversibly inhibiting the action of a
 CC catalytic antibody, which involves administering the CRTSA, which
 CC comprises an epitope recognised and irreversibly bound by the catalytic
 CC antibody. Preferably CRTSA is useful for treating an autoimmune disease,
 CC such as autoimmune thyroiditis, systemic lupus erythematosus, asthma,
 CC rheumatoid arthritis, mixed connective disease, Reiter's syndrome,
 CC Sjogren's syndrome, vasculitis or bird shot retinopathy, a
 CC lymphoproliferative disorder, such as myelomas, leukaemias, lymphomas,
 CC macroglobulinaemia etc. CRTSA is also useful for stimulating production
 CC of catalytic antibodies (vaccine), for actively, or passively, immunising
 CC a patient against e.g. a microbial infection and for selecting catalytic
 CC antibodies on the surface of phage and B cells. This technology has
 CC applications in fields of veterinary medicine, industrial and clinical
 CC research and dermatological. The catalytic antibodies are useful for
 CC preventing medical disorders such as septic shock, systemic inflammatory
 CC disease, acute respiratory distress syndrome, neoplastic disease, human
 CC immunodeficiency virus (HIV) and acquired immunodeficiency syndrome.
 CC CRTSAs preferentially stimulate the production of catalytic antibodies
 CC which provides superior protection against infection due to the presence
 CC of catalytic action against the target antigen which results in its
 CC permanent inactivation. The sequence presented is the tetanus toxin T
 CC epitope which can be placed on the N-terminal side of the B epitope (HIV-
 CC 1 gp120 immunogenic B epitope) eliminating the need to conjugate the B
 CC epitope to a large carrier protein
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 28
 ABP72694
 ID ABP72694 standard; peptide; 15 AA.
 XX
 XX ABP72694;
 XX

DT 11-JUN-2003 (first entry)
 XX Tetanus toxoid T cell epitope P2.
 DE
 XX
 KW Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX Clostridium tetani.
 OS
 XX WO2003015812-A2.
 PN
 XX 27-FEB-2003.
 PD
 XX
 XX 20-AUG-2002; 2002WO-DK000547.
 PF
 XX 20-AUG-2001; 2001DK-00001231.
 PR
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan FD;
 PI WPI; 2003-312718/30.
 XX N-PSDB; ABZ81992.
 DR
 XX
 PS Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.
 XX Disclosure; Page 120; 122pp; English.
 PS
 XX The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P2. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P2 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 30
 ID AAO30454
 ID AAO30454 standard; peptide; 15 AA.
 AC AAO30454;
 XX 22-SEP-2003 (first entry)
 DT Tetanus toxoid epitope (P2) peptide.
 DE
 XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; epitope;
 KW tetanus toxoid.
 XX Unidentified.
 OS
 XX WO2003042244-A2.
 PN
 XX 22-MAY-2003.
 PD
 XX
 XX 15-NOV-2002; 2002WO-DK000764.
 PF
 XX 16-NOV-2001; 2001DK-00001702.
 PR
 PR 16-NOV-2001; 2001US-0331575P.
 PR
 XX (PHAR-) PHARMEXA AS.
 PA (KLIYS/) KLIYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.
 XX
 XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 PI WPI; 2003-449558/42.
 DR N-PSDB; AAL61290.
 DR

DT 11-JUN-2003 (first entry)
 XX Tetanus toxoid T cell epitope P2.
 DE
 XX
 KW Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX Clostridium tetani.
 OS
 XX WO2003015812-A2.
 PN
 XX 27-FEB-2003.
 PD
 XX
 XX 20-AUG-2002; 2002WO-DK000547.
 PF
 XX 20-AUG-2001; 2001DK-00001231.
 PR
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan FD;
 PI WPI; 2003-312718/30.
 XX N-PSDB; ABZ81992.
 DR
 XX
 PS Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.
 XX Disclosure; Page 120; 122pp; English.
 PS
 XX The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P2. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P2 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 29
 ID ADA25169
 ID ADA25169 standard; peptide; 15 AA.
 AC ADA25169;
 XX 20-NOV-2003 (first entry)
 DT C. tetani T-cell epitope #3.
 DE
 XX finbrin; non-typable Haemophilus influenzae; NTHi infection;
 KW otitis media; epitope; immunogenic.
 KW Clostridium tetani.
 OS

XX New immunogenic analogue of a polymeric protein, useful for preparing a
PT composition for treating inflammatory diseases e.g. arthritis.
XX
XX Example 8; Page 106; 196pp; English.
XX
CC The invention relates to immunogenic analogues of multimeric proteins
CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
CC analogues. The immunogenic analogue is useful for preparing a composition
CC for treating inflammatory diseases, e.g., arthritis. It is also used in
CC gene therapy. The present sequence is a tetanus toxoid epitope peptide.
CC This sequence is used to illustrate the method of the invention
XX
XX SQ Sequence 15 AA;

SQ Query Match 100.0%; Score 74; DB 6; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 31
ABR82482
ID ABR82482 standard; peptide; 15 AA.
AC
XX ABR82482;
XX
DT 20-NOV-2003 (first entry)
XX
XX Tetanus toxoid P2 epitope sequence.
XX
XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
XX APC; cytostatic; vaccine; tetanus toxoid; p2; p30; antigen.
XX
XX Clostridium tetani.
XX
XX WO2003059379-A2.
XX
XX 24-JUL-2003.
XX
XX 17-JAN-2003; 2003WO-DK000031.
XX
XX 17-JAN-2002; 2002DK-00000082.
XX 17-JAN-2002; 2002US-0350047P.
XX
XX (PHAR-) PHARMEXA AS.
XX
XX Klysner S, Voldborg B;
XX
XX WPI; 2003-587260/55.
XX
XX Inducing an immune response in humans against autologous carcinoembryonic
XX antigen (CEA) comprises administering a modified CEA polypeptide, a
XX nucleic acid encoding the polypeptide, or a microorganism expressing the
XX polypeptide.
XX
XX Disclosure; Page 139; 140pp; English.
XX
XX The invention relates to inducing an immune response against autologous
XX carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
XX involves effecting uptake and processing by antigen presenting cells
XX (APCs) in the animal of at least 1 modified CEA polypeptide or of a
XX nucleic acid encoding the modified CEA polypeptide or of a microorganism
XX or virus expressing the modified CEA polypeptide to induce a CTL response
XX and an antibody response that targets the autologous CEA. The method is
XX useful in immunizing actively against diseases characterized by cells
XX that express CEA. The present sequence represents a tetanus toxoid (TT)
XX P2 epitope that can be introduced into a CEA polypeptide sequence

SQ Sequence 15 AA;

SQ Query Match 100.0%; Score 74; DB 7; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 32
ADC09976
ID ADC09976 standard; peptide; 15 AA.
XX
XX ADC09976;
XX
DT 18-DEC-2003 (first entry)
XX
XX Tetanus toxoid TT830-844, universal T-cell epitope.
XX BCG; T-cell; epitope; gastrointestinal; antiulcer.
XX Clostridium tetani.
XX
XX WO2003072040-A2.
XX
XX 04-SEP-2003.
XX
XX 25-FEB-2003; 2003WO-US005421.
XX
XX 25-FEB-2002; 2002US-0360134P.
XX 23-APR-2002; 2002US-0374501P.
XX
XX (ELAN-) ELAN PHARM INC.
XX
XX Taylor J, Yednock TA;
XX
XX WPI; 2003-712654/67.
XX
XX Preventing and/or reducing pathological inflammation by administration of
XX an agent inhibiting alpha-4 integrin or its dimer, useful in treating
XX multiple sclerosis, Crohn's disease, ulcerative colitis or inflammatory
XX bowel disease.
XX
XX Disclosure; Page 17; 89pp; English.
XX
XX The present sequence is that of a universal T-cell epitope comprising
XX amino acids 830-844 of tetanus toxoid. Universal T-cell epitopes such as
XX this can be used as carriers of peptide agents of the invention that bind
XX alpha-4 integrin or a dimer comprising an alpha-4 integrin subunit.
XX Linkage to a carrier will improve the immune response to a peptide that
XX may be too small to be immunogenic on its own. A method of chronically
XX reducing a patient's pathological inflammation involves administration of
XX an agent that specifically binds to an alpha-4 integrin or a dimer
XX comprising alpha-4 integrin. The agent is administered chronically for at
XX least 6 months, preferably at least 12 months. The administration
XX maintains alpha-4 integrin receptor saturation to chronically suppress
XX pathological inflammation in the patient. The pathological inflammation
XX is caused by inflammatory disease of the gastrointestinal tract, such as
XX Crohn's disease, ulcerative colitis or inflammatory bowel disease, or is
XX caused by multiple sclerosis (all claimed).
XX
XX SQ Sequence 15 AA;

SQ Query Match 100.0%; Score 74; DB 7; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 33

ADC89658
ID ADC89658 standard; peptide; 15 AA.

XX AC ADC89658;

XX DT 01-JAN-2004 (first entry)

XX DE C. tetani T cell epitope #3.

XX KW Fimbrin; T cell epitope; vaccine; otitis media; auditory;
XX KW antiinflammatory.

XX OS Clostridium tetani.

XX PN US2003113344-A1.

XX PD 19-JUN-2003.

XX PF 19-AUG-2002; 2002US-00223711.

XX PR 04-SEP-1998; 98US-00148711.

XX PA (BAKA/) BAKALETZ L O.

XX PA (KAUM/) KAUMAYA P T P.

XX PI Bakaletz LO, Kaumaya PTP;

XX DR WPI; 2003-810881/76.

XX PT Novel synthetic chimeric fimbrin peptide LB1 or LB2 comprising a first
PT peptide unit, T cell epitope as second peptide unit and third linker
PT peptide unit, useful for preventing or reducing severity of otitis media.

XX PS Claim 10; SEQ ID NO 7; 15pp; English.

XX CC The invention relates to a synthetic chimaeric fimbrin peptide LB1 or LB2
CC comprises a first peptide unit derived from H. influenzae fimbrin, a
CC second peptide unit containing a T cell epitope and a third linker,
CC peptide which connects the first peptide to the second. The chimaeric
CC peptide is useful for inducing an immune response in animals against non-
CC typhale haemophilus influenzae (NTHi) and for preventing or reducing
CC adherence of NTHi to host cells thereby preventing or reducing the
CC severity of otitis media. The present sequence is a clostridium tetani T
CC cell epitope for use in the chimaeric peptides of the invention.

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 7; Length 15;

Best Local Similarity 100.0%; Pred. No. 9.4e-07;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15

RESULT 34

ADC81609

ID ADC81609 standard; peptide; 15 AA.

XX AC ADC81609;

XX DT 01-JAN-2004 (first entry)

XX DE Tetanus toxoid P2 epitope SEQ ID NO:2.

XX KW pain reduction; nociceptive; nociceptor; immune response;
XX KW tumour necrosis factor alpha; TNFalpha; analgesic; vaccine; pain;
XX KW neuropathic pain; tetanus toxoid; epitope.

XX OS Synthetic.

OS Clostridium tetani.

PN WO2003075951-A2.

XX PD 18-SEP-2003.

XX PF 11-MAR-2003; 2003WO-DK000147.

XX PR 11-MAR-2002; 2002DK-00000368.

XX PR 11-MAR-2002; 2002US-0363128P.

XX PA (PHAR-) PHARMEXA AS.

XX PI Pedersen HR, Ebert B, Pedersen LH, Rasmussen PB;

XX WPI; 2003-748335/70.

XX PT Reducing pain or increasing the threshold for nociception in an
PT individual comprises administering an agent capable of inducing an active
PT immune response that targets the individual's autologous tumor necrosis
PT factor alpha.

XX PS Disclosure; SEQ ID NO 2; 120pp; English.

XX CC The present invention describes a method for reducing pain or increasing
CC the threshold for nociception in an individual comprising administering
CC an agent capable of inducing an active immune response that targets the
CC individual's autologous tumour necrosis factor alpha (TNFalpha). The
CC agent has analgesic activity, and can be used in a vaccine against
CC autologous TNFalpha. The method is useful in reducing pain or increasing
CC the threshold for nociception in an individual. The method is especially
CC intended for reducing neuropathic pain. The present sequence represents a
CC tetanus toxoid P2 epitope, which is given in the exemplification of the
CC present invention.

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 7; Length 15;

Best Local Similarity 100.0%; Pred. No. 9.4e-07;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15

RESULT 35

ADL90086

ID ADL90086 standard; protein; 15 AA.

XX AC ADL90086;

XX DT 17-JUN-2004 (first entry)

XX DE Universal T helper epitope, SEQ ID 26.

XX KW Immune response; immunoglobulin; Ig; T helper epitope.

XX OS Unidentified.

XX PN WO2004027049-A2.

XX PD 01-APR-2004.

XX PF 18-SEP-2003; 2003WO-US030188.

XX PR 20-SEP-2002; 2002US-0412219P.

XX PR 14-MAR-2003; 2003WO-US007995.

XX PA (ASTR-) ASTRAL INC.

XX PI Bot A, Wang L, Smith D, Phillips B;

DR WPI; 2004-295415/27.
 XX Generating an immune response to an antigen, useful for generating
 PT desired T cell responses comprising administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 XX
 PS Disclosure; Fig 1J; 154pp; English.
 XX
 CC The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to a patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 36
 ADM06894
 ID ADM06894 standard; protein; 15 AA.
 XX
 AC ADM06894;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Tetanus toxin P2 epitope, SEQ ID NO:7.
 XX
 KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; tetanus toxin; P2 epitope;
 KW T-cell epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004024183-A1.
 XX
 PD 25-MAR-2004.
 XX
 PF 12-SEP-2003; 2003WO-DK000592.
 XX
 PR 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX
 PA (PHAR-) PHARMEXA AS.
 XX
 PI Bovine TEG, Klysner S;
 XX
 DR WPI; 2004-329403/30.
 XX
 XX Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX
 PS Example 2; SEQ ID NO 7; 83pp; English.
 XX
 CC The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the

CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor in
 CC related cancers. The present sequence represents the tetanus toxin P2
 CC epitope, a promiscuous T-cell epitope, which may be used in ghrelin
 CC analogues of the invention.
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 37
 ADP02883
 ID ADP02883 standard; peptide; 15 AA.
 XX
 AC ADP02883;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 830-844 for fusion protein.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 16; 78pp; English.
 XX
 CC The invention relates to a method of preventing (MI) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (MI) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,

CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
 CC peptide corresponding to amino acid 830-844 used in the method of the
 CC invention.
 XX
 XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 38

ADP02898
 ID ADP02898 standard; peptide; 15 AA.

XX AC ADP02898;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #10 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Synthetic.

XX PN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 by Lewy bodies or alpha-synuclein aggregation in brain by administering
 XX PT agent that induces immunogenic response against alpha-synuclein and/or
 beta-amyloid.

XX PS Disclosure; SEQ ID NO 31; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a
 disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 39

ADP02876

ID ADP02876 standard; peptide; 15 AA.

XX AC ADP02876;

XX DT 12-AUG-2004 (first entry)

XX DE Tetanus toxoid amino acids 830-844.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Clostridium tetani.

XX PN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 by Lewy bodies or alpha-synuclein aggregation in brain by administering
 XX PT agent that induces immunogenic response against alpha-synuclein and/or
 beta-amyloid.

XX PS Disclosure; SEQ ID NO 9; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a
 disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to amino acids 830-844
 CC of the tetanus toxoid protein used in the method of the invention.

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 40

ADP02885
 ID ADP02885 standard; peptide; 15 AA.
 XX
 XX ADP02885;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 830-844 for fusion protein.
 XX
 DE antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 XX Clostridium tetani.
 OS
 XX WO2004041067-A2.
 PN
 XX 21-MAY-2004.
 XX
 XX 31-OCT-2003; 2003WO-US034527.
 PF
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 XX (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 PA
 XX
 PI Schenk DB, Masliah E;
 XX
 XX WPI; 2004-411388/38.
 DR
 XX
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 XX Disclosure; SEQ ID NO 18; 78pp; English.

PS
 XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
 CC peptide corresponding to amino acid 830-844 used in the method of the
 CC invention.
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07; Indels 0; Gaps 0;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15

RESULT 41

ADO24820
 ID ADO24820 standard; peptide; 15 AA.
 XX
 XX ADO24820;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 XX Tetanus toxoid peptide #1 for carbohydrate dendrimer conjugate.

XX

KW antibacterial; virucide; fungicide; hepatotropic; anti-HIV; cytostatic;
 KW vaccine; bacterial adhesion inhibitor; toxin action inhibitor;
 KW carbohydrate dendrimer; immunomodulating substance; HIV; hepatitis;
 KW influenza; fungal disease; cancer; carcinoma; melanoma; poliovirus.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041310-A1.
 XX
 XX 21-MAY-2004.
 XX
 XX 07-NOV-2003; 2003WO-DK000766.
 PF
 XX
 PR 08-NOV-2002; 2002DK-00001724.
 XX
 XX (DAFO-) DANMARKS FODEVARE OG VETERINAERFORSKNING.
 PA
 XX Heegaard P, Boas U;
 XX
 XX WPI; 2004-419632/39.
 DR
 XX
 XX Synthesizing chemoselectively carbohydrate dendrimer conjugate having
 PT carbohydrate residue and immunomodulating substance, by identifying
 PT chemoselective and carbohydrate residue, and binding residues to
 PT dendrimer.
 XX
 XX Disclosure; Page 20; 81pp; English.

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OS Clostridium tetani.
 XX WO2004052930-A2.
 PN 24-JUN-2004.
 PD 11-DEC-2003; 2003WO-DK000859.
 XX 11-DEC-2002; 2002DK-00001893.
 XX 11-DEC-2002; 2002US-0432532P.
 PR 12-FEB-2003; 2003DK-00000198.
 PR 12-FEB-2003; 2003US-0446707P.
 XX (PHAR-) PHARMEXA AS.
 PA Mouritsen S;
 XX WPI; 2004-468817/44.
 DR
 XX
 PT New chimeric binding protein comprising a B-cell epitope, a scaffold
 XX protein structure and a tolerance breaking amino acid sequence, useful in
 XX preparing a vaccine against e.g. cancer.
 PT
 XX Disclosure; SEQ ID NO 1; 61pp; English.
 XX
 CC The invention relates to a novel chimeric binding protein that is
 CC immunogenic in an animal. The chimeric binding protein binds specifically
 CC to a first receptor that binds a second receptor present in an antigen of
 CC the animal, where the chimeric binding protein has: a B-cell epitope in
 CC the form of a binding site; a scaffold protein structure, autologous in
 CC the mammal, that stabilizes the 3D conformation of the binding site; and
 CC at least one tolerance breaking amino acid sequence, which is
 CC heterologous in the animal and which binds to a major histocompatibility
 CC complex (MHC) Class II molecule in the animal. The invention further
 CC comprises: a nucleic acid fragment that encodes the chimeric binding
 CC protein; a vector carrying the nucleic acid fragment; a transformed cell
 CC carrying the vector; a composition for inducing production of antibodies
 CC against an antigen in the autologous host comprising the chimeric binding
 CC protein, nucleic acid fragment and a carrier, and down-regulating a self-
 CC antigen or a cell that displays epitopes of the self-antigen in an
 CC animal. The chimeric binding protein has cytostatic activity. The
 CC chimeric binding protein is useful in preparing a vaccine against e.g.
 CC cancer. This sequence represents a 'promiscuous' T-H tetanus toxoid
 CC epitope peptide for use in the vaccine of the invention.
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 43
 ADP76011
 ID ADP76011 standard; peptide; 15 AA.
 XX
 AC ADP76011;
 XX
 XX 09-SEP-2004 (first entry)
 DT
 XX Peptide epitope from tetanus toxoid protein.
 DE antigen specific activation; antibody producing cell;
 XX non-adherent mononuclear immune cell; T helper cell;
 KW lysosome-containing cell; differentiation.
 KW Clostridium tetani.
 OS
 XX WO2004053139-A1.
 XX
 PT

XX 24-JUN-2004.
 XX 10-DEC-2003; 2003WO-AU001655.
 PF 10-DEC-2002; 2002US-0432395P.
 XX (APOL-) APOLLO LIFE SCI PTY LTD.
 PA Chen J;
 PI WPI; 2004-487905/46.
 XX
 XX In vitro antigen specific activation of antibody producing cells
 XX comprises culturing a population of isolated, non-adherent mononuclear
 PT immune cells for a time and under conditions sufficient to induce
 PT differentiation of the cell.
 XX
 XX Claim 23; SEQ ID NO 2; 88pp; English.
 XX
 CC The invention relates to a method of in vitro antigen specific activation
 CC of antibody producing cells by culturing a population of isolated, non-
 CC adherent mononuclear immune cells, which population comprises T helper
 CC cells or its functionally equivalent, where the antibody producing cells
 CC and a functionally insignificant number of lysosome-containing cells, for
 CC a time and under conditions sufficient to induce differentiation of the
 CC antibody producing cell. The method is useful for in vitro antigen
 CC specific activation of antibody producing cells. This sequence
 CC corresponds to an epitope from the tetanus toxoid protein and used in the
 CC method of the invention.
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 44
 AAW35445
 ID AAW35445 standard; peptide; 16 AA.
 XX
 AC AAW35445;
 XX
 XX 25-MAR-2003 (revised)
 DT 22-APR-1998 (first entry)
 XX
 XX T-cell stimulatory peptide SEQ ID NO:51.
 DE
 XX T-cell stimulatory peptide; immunogen; non-dendritic; carrier; tumour;
 KW scaffold; inhibition; metastasis; wound healing; solid phase.
 KW Unidentified.
 OS
 XX WO9738011-A1.
 PN 16-OCT-1997.
 PD 03-APR-1997; 97WO-DK000146.
 PF 03-APR-1996; 96DK-00000398.
 XX (PEPR-) PEPRESEARCH AS.
 PA Heegaard PMH, Jakobsen PH;
 XX WPI; 1997-512645/47.
 XX
 XX Non-dendritic peptide carrier linked to a solid phase - useful as a
 PT

PT diagnostic agent and as a scaffold for production of chemical
 PT derivatives.

PS Claim 30; Page 199; 262pp; English.

XX A non-dendritic peptide carrier (A) has been developed which is coupled
 CC through a linker to a solid phase, forming a complex of (A)-solid phase.
 CC Where (A) comprises 10-50 amino acids capable of forming a secondary
 CC structure in a benign buffer after liberation from the solid phase, and
 CC further the (A)-solid phase complex comprises an immunogenic substance
 CC and/or an immune mediator coupled on (A). The present sequence represents
 CC a specifically claimed T-cell stimulatory peptide from the present
 CC invention. An (A)-solid phase complex can be used as a scaffold for the
 CC production of chemical derivatives, characterised by covalently attaching
 CC molecules at attachment points. Alternatively (A) is used as a scaffold-
 CC peptide for the incorporation into an immunostimulating complex (iscom)
 CC resulting in an (A)-iscom complex which is used for the chemical coupling of
 CC antigenic substances in an aqueous solution by conjugation. (A)
 CC derivatised with one or more peptides having fibronectin-, laminin- or
 CC vitronectin-like binding activities can be used for the promotion of cell
 CC -attachment to plastic surfaces, in particular to inhibit tumour growth
 CC and metastasis, and for promotion of wound healing. Also a derivatised
 CC (A) can be used for the selection of specifically-binding aptamers or as
 CC a diagnostic agent. Such diagnostic- (A) molecules could be used to detect
 CC molecules derived from or indicative of pregnancy or of a disease, such
 CC as an infectious, autoimmune or cancerous disease. (Updated on 25-MAR-
 CC 2003 to correct PF field.)

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 2; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 45

AAU1413
 ID AAU1413 standard; protein; 16 AA.

XX AAY29705;

DT 08-NOV-1999 (first entry)

XX Clostridium tetani antigen tox polypeptide haptan.

XX Human hepatitis B core protein; HBC; modified; immunodominant;
 KW nucleocapsid protein; vaccine; T cell epitope.

XX Clostridium tetani.

XX WO9940934-A1.

XX 19-AUG-1999.

PF 11-FEB-1999; 99WO-US0003055.

PR 12-FEB-1998; 98US-0074537P.

XX (IMMU-) IMMUNE COMPLEX CORP.

XX Birkett AJ;

XX WPI; 1999-527340/44.

XX Conjugate of hepatitis B core protein, modified to increase reactivity
 PT with haptan, used to raise antibodies against the haptan, e.g. in
 PT vaccines.

XX Example 3; Page 38; 128pp; English.

XX The present invention describes a conjugate (A) comprising a
 CC strategically modified hepatitis B core (HBC) protein (I) attached to a
 CC haptan, where (I) includes amino acids (aa) 10-140 of the wild type HBC
 CC 183 aa sequence (given in AAY29674) and additionally has an insert (II)
 CC in the region corresponding to aa's 50-100, where the insert is of 1 to
 CC about 40 aa's and contains a chemically reactive aa residue linked to the
 CC haptan. A vaccine containing (A), optionally in the form of particles, is
 CC used to induce a protective antibody response against the pathogen from
 CC which the haptan is derived, in humans or other animals. These pathogens
 CC may be bacteria, viruses, rickettsia or protozoa. Insertion of (II)
 CC overcomes the low reactivity of aa side chains in native HBC protein,
 CC increasing the reactivity with haptan and resulting in conjugates of
 CC improved immunogenicity. Modified HBC can be derivatised in the form of
 CC particles by well-defined chemical methods, and is unlikely to cause
 CC immunological side-effects. AAY29675 to AAY29735 represent polypeptide
 CC haptans used in an example from the present invention
 XX

SQ Sequence 16 AA;

Query Match 100.0%; Score 74; DB 2; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 46

AAU1413

ID AAU1413 standard; peptide; 16 AA.

XX AAU1413;

DT 12-MAR-2002 (first entry)

XX Tetanus toxoid precursor peptide, tentoxylisin.

XX Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;

XX promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;

XX uterine fibroid; benign prostatic hypertrophy; prostate cancer;

XX Tetanus toxoid precursor peptide; tentoxylisin.

XX Clostridium tetani.

XX WO200185763-A2.

XX 15-NOV-2001.

XX 04-MAY-2001; 2001WO-US014363.

XX 05-MAY-2000; 2000US-0202328P.

XX (APHT-) APHTON CORP.

XX Grimes S, Michaeli D, Stevens VC;

XX WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
 PT gonadotropin releasing hormone, comprises fusion peptide having
 PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 PT or its analog.

XX Disclosure; Page 28; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and

CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is Tetanus
 CC toxoid precursor peptide, tentoxylisin, a promiscuous helper T-cell
 CC peptide epitope used in the immunogen of the invention
 CC
 XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 5; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 2 QYIKANSKFIGITEL 16
 |||||

RESULT 47

AAU93865
 ID AAU93865 standard; peptide; 16 AA.

XX AC AAU93865;

DT 02-JUL-2002 (first entry)

XX Clostridium tetani tox T cell epitope.

XX Immunogenic; hepadnavirus nucleocapsid protein; hepatitis B core; HBC;
 KW vaccine; B cell epitope; T cell epitope; immunostimulant.

XX Clostridium tetani.

XX WO200214478-A2.

XX 21-FEB-2002.

XX 16-AUG-2001; 2001WO-US041759.

XX 16-AUG-2000; 2000US-0225843P.

XX 22-AUG-2000; 2000US-0226867P.

XX 15-AUG-2001; 2001US-00930915.

XX (APOV-) APOVIA INC.

XX Birkett AJ;

XX WPI; 2002-257601/30.

XX Novel recombinant hepadnavirus nucleocapsid protein, termed as chimeric
 PT hepatitis B core protein, displays immunogenic epitopes at N-terminus,
 PT HBC immunogenic loop with linker for conjugated epitope and C-terminus.

XX Disclosure; Page 43; 289pp; English.

XX The invention relates to a recombinant hepadnavirus nucleocapsid protein,
 CC i.e. a chimeric hepatitis B core (HBC) protein (I), displaying one or
 CC more immunogenic epitopes at the N-terminus, HBC immunogenic loop (L) or
 CC C-terminus, or having a heterologous linker for a conjugated epitope in
 CC (L), and containing a Cys residue at, or near, the C-terminus that
 CC confers enhanced stability to the particles. A vaccine comprising (I) is
 CC useful for inducing an immune response in an inoculated host animal, by
 CC inoculating a host animal with the vaccine, and maintaining that
 CC inoculated animal for a time period sufficient for that animal to develop
 CC an immune response. The immunogenic particles formed using (I) are
 CC substantially free of binding to nucleic acids, and are most stable than
 CC the particle formed from otherwise identical HBC chimera that lacks the C-
 CC terminal residue or in which a C-terminal Cys is replaced by another
 CC residue. The chimera particles are most stable on storage in aqueous
 CC compositions that are particles of similar sequence that lack any C-

CC terminal Cys residues. The chimera molecule exhibits the self-assembly not
 CC exhibiting the nucleic acid binding of those native particles, and
 CC excellent B cell and T cell immunogenicities. The chimera particles are
 CC typically prepared in higher yield than similar particles that are free
 CC of a C-terminal Cys. The particles are often far more immunogenic than
 CC the similar conjugates that lack a C-terminal Cys. Immunogenicities of
 CC particles assembled from the chimera molecules are enhanced as compared to
 CC similar particles assembled from chimera molecules lacking at least one C-
 CC terminal Cys. AAU93802-AAU93997 represent immunogenic HBC particles amino
 CC acid sequences and related sequences of the invention
 CC
 XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 5; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||

RESULT 48

ADE10941

ID ADE10941 standard; peptide; 16 AA.

XX AC ADE10941;

XX 29-JAN-2004 (first entry)

XX Chimeric hepatitis B virus related B-cell epitope seqid 175.

XX hepatotropic; virucide; antiinflammatory; chronic hepatitis; vaccine;
 KW recombinant hepatitis B core chimeric protein; HBC chimeric protein;
 KW hepatitis B infection; T-cell stimulator; B-cell epitope.

XX Clostridium tetani.

XX US2003198645-A1.

XX 23-OCT-2003.

XX 21-FEB-2003; 2003US-00372076.

XX 21-FEB-2002; 2002US-0080299.

XX 21-FEB-2002; 2002US-0082014.

XX (PAGE//) PAGE M.

XX (FRIE//) FRIEDE M.

XX Page M, Friede M;

XX WPI; 2003-852775/79.

XX Treating chronic hepatitis B infection by administering a T cell-
 PT stimulating vaccine containing immunogenic particles having recombinant
 PT carboxy-terminal truncated hepatitis B core (HBC) chimeric protein
 PT molecules.

XX Disclosure; SEQ ID NO 175; 11pp; English.

XX The invention describes a method of treating chronic hepatitis comprising
 CC administering to a patient a T cell-stimulating amount of a vaccine
 CC comprising immunogenic particles dissolved or dispersed in a diluent,
 CC where the immunogenic particles consists of recombinant hepatitis B core
 CC (HBC) chimeric protein molecules, and maintaining the patient to induce T
 CC cells activated against HBC. The methods and compositions of the present
 CC invention are useful for treating chronic hepatitis B infection. This is
 CC the amino acid sequence of a chimeric hepatitis B virus related B-cell
 CC epitope useful for expression within the HBV chimera at the N-terminus,
 CC within the immunogenic loop and/or at the C-terminus.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15

RESULT 49

ID ADK41128 standard; peptide; 16 AA.

XX ADK41128;

XX 06-MAY-2004 (first entry)

XX Tetanus toxin T-cell epitope.

XX immunosuppressive; neuroprotective; antirheumatic; antiarthritic;
 KW antiporiatic; antidiabetic; dermatological; antiinflammatory;
 KW antiallergic; antiasthmatic; cytostatic; anti-HIV; vaccine; cytokine;
 KW multiple sclerosis; rheumatoid polyarthritis; psoriasis;
 KW autoimmune diabetes; lupus; allergy; asthma; cancer; AIDS;
 KW immune response.

XX Clostridium tetani.

XX WO2003084979-A2.

XX 16-OCT-2003.

PF 09-APR-2003; 2003WO-FR001120.

PR 10-APR-2002; 2002FR-00004464.

PA (ZAGU/) ZAGURY J.

PI Zagury J;

XX WPI; 2003-812717/76.

XX New cytokine-derived peptide, useful as vaccine for treating conditions
 PT caused by excess cytokine, contains residues closely associated with a
 PT cytokine receptor.

PS Example 13; SEQ ID NO 55; 42pp; French.

XX The invention relates to novel peptides (I) of 5-40 amino acids (aa)
 CC derived from a cytokine in which at least one aa has at least one of its
 CC atoms spaced a distance (d), evaluated from structural data, less than 5
 CC angstrom from an atom of the corresponding cytokine receptor is new.
 CC Excluded are peptides from between the 2nd and 3rd Cys of RANTES and from
 CC residues 123-140 of interferon-alpha. (I) and their derivatives, also
 CC peptides from the 123-140 region of interferon-alpha, are useful for
 CC treatment and prevention of diseases associated with high levels of
 CC cytokines, e.g. multiple sclerosis, rheumatoid polyarthritis, psoriasis,
 CC autoimmune diabetes, lupus, allergy, asthma, cancer and AIDS. Since (I)
 CC correspond to regions very close to the receptor, production of
 CC antibodies that facilitate or potentiate cytokines is limited, and the
 CC quality of the immune response is improved by restricting the number of
 CC antigenic determinants targeted. This sequence corresponds to the tetanus
 CC toxin T-cell epitope and used in the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 2 QYIKANSKFIGITEL 16

RESULT 50

ID ADM39833 standard; peptide; 16 AA.

XX ADM39833;

XX 03-JUN-2004 (first entry)

XX C_tetani T-cell peptide epitope expressed by Hbc chimera Seq 165.

XX immunogenic; avian hepatitis B virus; nucleocapsid;
 KW self assembled particle; immunogen; inoculum; vaccine; immunostimulant;
 KW antibacterial; virucidal; T-cell epitope.

XX Clostridium tetani.

XX WO2003072722-A2.

XX 04-SEP-2003.

PF 21-FEB-2003; 2003WO-US005315.

PR 21-FEB-2002; 2002US-0359129P.

XX (APOV-) APOVIA INC.

XX Birkett AJ, Peck B;

XX WPI; 2003-679948/64.

XX New recombinant chimera avian hepatitis B core protein molecule, useful as
 PT an immunogen for inducing a B cell or T cell response to produce
 PT antibodies, or as a vaccine against pathogens.

PS Disclosure; SEQ ID NO 165; 278pp; English.

XX This invention relates to novel recombinant immunogenic chimeric avian
 CC hepatitis B core (AHBC) nucleocapsid proteins. Specifically, it refers to
 CC an AHBC protein that has been engineered to display an immunogenic B cell
 CC or T cell epitope, exhibit enhanced stability and an absence of nucleic
 CC acid binding as a self assembled particle. The present invention
 CC describes the chimeric AHBC protein as truncated at the C-terminus and
 CC containing introduced cysteine residues that confers an enhanced
 CC stability in aqueous solution, an increased yield and more immunogenicity
 CC than similar conjugates that lack N- or C-terminal cysteines.
 CC Furthermore, a reduction in the number of positively charged residues
 CC (lysine and arginine) towards the C-terminus prepares self-assembled
 CC particles that are substantially free of nucleic acid binding. As such,
 CC these chimeric particles can be used as immunogens of an inoculum that
 CC induce a B cell or T cell response in an animal to produce antibodies. It
 CC can also be useful for developing a vaccine to protect against the
 CC pathogen from which the heterologous epitope or the haptens is derived.
 CC Accordingly, these compositions exhibit immunostimulant, antibacterial
 CC and virucidal activities. This peptide sequence is an exemplary T-cell
 CC epitope peptide immunogen useful for both linkage to the linker residue
 CC after expression of a contemplated chimera and for expression within an
 CC HBC chimera of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15

RESULT 51

ADG64012
 ID ADG64012 standard; peptide; 16 AA.
 XX
 AC ADG64012;
 XX
 DT 11-MAR-2004 (first entry)
 XX
 DE Recombinant chimera hepatitis B core protein immunogenic epitope #134.
 XX
 KW Recombinant chimera hepatitis B core protein; HBC; immunogenic epitope;
 KW HBC immunodominant loop; immune response.
 XX
 OS Clostridium tetani.
 XX
 PN US2003185858-A1.
 XX
 PD 02-OCT-2003.
 XX
 PF 21-FEB-2002; 2002US-00082014.
 XX
 PR 15-AUG-2001; 2001US-00930915.
 XX
 PA (BIRK/) BIRKETT A J.
 XX
 PI Birkett AJ;
 XX
 DR WPI; 2004-031988/03.
 XX
 XX Recombinant chimera hepatitis B core protein molecule useful for preparing
 PT vaccine or inoculum includes peptide-bonded heterologous immunogenic
 PT epitope at N-terminus in the hepatitis B core immunodominant loop or C-
 PT terminus of the chimera.
 XX
 PS Disclosure; SEQ ID NO 145; 110pp; English.
 XX
 CC The invention relates to a recombinant chimera hepatitis B core (HBC)
 CC protein molecule that includes a peptide-bonded heterologous immunogenic
 CC epitope at the N-terminus in the HBC immunodominant loop or the C-
 CC terminus of the chimera, or a heterologous linker residue for a conjugated
 CC epitope present in the loop. The invention also relates to an immunogenic
 CC particle comprising the recombinant hepatitis B core chimeric protein
 CC molecules, a vaccine comprising the immunogenic particles dissolved or
 CC dispersed in a diluent, a nucleic acid that encodes a recombinant HBC
 CC protein molecule or its variant, analogue, or complement and a method for
 CC inducing an immune response in an inoculated host animal comprising
 CC inoculating a host animal with a vaccine and maintaining the inoculated
 CC animal for a period of time sufficient to enable development of an immune
 CC response. The recombinant chimera hepatitis B core protein molecule is
 CC used in an immunogenic particle for preparing a vaccine useful for
 CC inducing an immune response in an inoculated host animal. This sequence
 CC represents an HBC protein immunogenic B cell epitope of the invention.
 XX
 SQ Sequence 16 AA;
 Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 52
 AAO24402
 ID AAO24402 standard; peptide; 16 AA.
 XX
 AC AAO24402;
 XX
 DT 06-MAY-2004 (first entry)
 XX
 DE HLA-A24-restricted cancer antigen peptide related peptide #36.
 XX

KW Human; mouse; HLA-A24-restricted cancer antigen; antigen; cancer;
 KW tumour suppressor protein; cytostatic; WT1; vaccine.
 OS Synthetic.
 XX
 PN WO2003106692-A1.
 XX
 PD 24-DEC-2003.
 XX
 PF 12-JUN-2003; 2003WO-JP007463.
 XX
 PR 12-JUN-2002; 2002JP-00171518.
 PR 20-SEP-2002; 2002JP-00275572.
 XX
 PA (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 PA (SUGI/) SUGIYAMA H.
 XX
 PI Sugiyama H, Gotoh M, Takasu H;
 XX WPI; 2004-090846/09.
 DR
 XX Antigenic peptides derived from WT1 which induce HLA-A24 restricted
 PT cytotoxic T-lymphocytes for production of cancer vaccine and treatment
 PT and prevention of cancer.
 XX
 PS Disclosure; Page 98; Opp; Japanese.
 XX
 CC The present invention relates to antigenic peptides derived from tumour
 CC suppressor protein WT1 which induce HLA-A24 restricted cytotoxic T-
 CC lymphocytes. The peptides can be used in the preparation of cancer
 CC vaccine for treatment and prevention of cancer, including leukaemia,
 CC multiple myeloma, lymphoma, and cancer of the stomach, colon, breast,
 CC liver, ovary, skin, pancreas, prostate and womb. The present sequence is
 CC a polypeptide used in the exemplification of the invention
 XX
 SQ Sequence 16 AA;
 Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 2 QYIKANSKFIGITEL 16
 RESULT 53
 ADO43877
 ID ADO43877 standard; peptide; 16 AA.
 XX
 AC ADO43877;
 XX
 DT 15-JUL-2004 (first entry)
 XX
 DE Amino acid sequence of synthetic peptide #2.
 XX
 KW Human; WT1; CTL induction; cancer vaccine; stomach cancer;
 KW prostate cancer; ovarian cancer.
 XX
 OS Synthetic.
 XX
 PN WO2004026897-A1.
 XX
 PD 01-APR-2004.
 XX
 PR 19-SEP-2003; 2003WO-JP011974.
 XX
 PF 20-SEP-2002; 2002JP-00275264.
 XX
 PA (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 PA (SUGI/) SUGIYAMA H.

XX Sugiyama H, Gotoh M, Takasu H, Samizo F, Kusunose N, Nakatsuka M;
 XX WPI; 2004-295379/27.
 XX Novel WT1 substitution peptides with cysteine replaced by specific amino
 PT acid residue and their encoded polynucleotide for cancer vaccines with
 PT CTL induction activity for treatment of e.g. stomach cancer and prostate
 PT cancer.

XX Disclosure; Page 18; 65pp; Japanese.

XX The specification describes WT1 substitution peptides, in which a
 CC cysteine residue is substituted with another amino acid residue. The WT1
 CC substitution peptides have CTL induction activity. Peptides of the
 CC invention are used in cancer vaccines, which are applicable in the
 CC treatment of e.g. stomach cancer, prostate cancer and ovarian cancer. The
 CC present peptide represents a peptide that is mentioned in the
 CC specification.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 2 QYIKANSKFIGITEL 16
 |||||

RESULT 54

ADP73582
 ID ADP73582 standard; peptide; 16 AA.

XX ADP73582;

XX 09-SEP-2004 (first entry)

DE Clostridium tetani T cell epitope of gene tox.

XX transgenic animal; Hepatitis B virus nucleocapsid core protein; HBC;
 KW enhanced stability; hepatotropic; virucide; immunology;
 KW protein engineering; immunogen; vaccine; Hepatitis B infection.

OS Clostridium tetani.

XX WO2004053091-A2.

XX 24-JUN-2004.

XX 10-DEC-2003; 2003WO-US039164.

XX 10-DEC-2002; 2002US-0432123P.

XX (APOV-) APOVIA INC.

PI Lyons K, Birkett AJ, Haron JA;

XX WPI; 2004-468859/44.

XX New recombinant chimera hepatitis B core (HBC) protein molecules useful in
 PT the fields of immunology and protein engineering, in particular as an
 PT immunogen in a vaccine for Hepatitis B infections.

PS Disclosure; SEQ ID NO 195; 338pp; English.

XX The invention relates to a novel recombinant chimeric Hepatitis B virus
 CC nucleocapsid (core) protein (HBC), up to 600 or 380 amino acid residues
 CC in length. The chimeric protein is engineered for both enhanced stability
 CC of self-assembled particles and the substantial absence of nucleic acid
 CC binding by the particles. The invention further comprises: a recombinant
 CC HBC protein chimeric molecule that has a length of 135-365 amino acid

CC residues and contains four peptide-linked amino acid residue sequence
 CC domains from the N-terminus that are denominated Domains I, II, III and
 CC IV. The invention also provides nucleic acids, polypeptides, host cells,
 CC vectors and transgenic animals used in the methods of the invention. The
 CC chimeric compositions of the invention have hepatotropic and virucide
 CC activities. The methods and compositions of the present invention are
 CC useful in the fields of immunology and protein engineering, in particular
 CC for using a chimeric hepatitis B virus nucleocapsid protein as an
 CC immunogen in a vaccine for Hepatitis B infections. This sequence
 CC represents a Hepatitis B virus nucleocapsid (core) protein related
 CC polypeptide of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 55

ADP90539
 ID ADP90539 standard; peptide; 16 AA.

XX ADP90539;

XX 23-SEP-2004 (first entry)

DE Helper peptide related to the SS393 peptide SeqID 8.

XX SYT-SSX; SS393; tumour antigen peptide; cancer vaccine;
 KW cytotoxic lymphocyte induction; synovial sarcoma; tumour; cytostatic;
 KW helper peptide.

OS Synthetic.

XX JP2004180566-A.

XX 02-JUL-2004.

XX 03-DEC-2002; 2002JP-00350633.

XX 03-DEC-2002; 2002JP-00350633.

XX (SATO/) SATO N.

XX (SUMU) SUMITOMO SEIYAKU KK.

XX WPI; 2004-472266/45.

XX Novel mutant peptide of SYT-SSX origin, useful as pharmaceutical
 PT composition of cancer vaccine for inducing cytotoxic T cells, and as
 PT diagnostic of tumor.

PS Disclosure; SEQ ID NO 8; 28pp; Japanese.

XX This invention relates to novel mutant peptides derived from SYT-SSX.
 CC Specifically, it refers to a peptide SS393, which is a modified tumour
 CC antigen peptide that can be used as the active ingredient in a cancer
 CC vaccine. The present invention describes the development of mutant
 CC peptides that exhibit increased binding affinity to the HLA-A24 antigen,
 CC and as such have a favourable cytotoxic lymphocyte (CTL) induction
 CC activity. Accordingly, these peptide epitopes can be used to treat
 CC patients suffering from various tumours including synovial sarcoma, and
 CC furthermore they exhibit cytostatic activities. This peptide sequence is
 CC a helper peptide related to the SS393 peptide of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 2 QYIKANSKFIGITEL 16
 |||||

RESULT 56
 AAR62692
 ID AAR62692 standard; peptide; 17 AA.
 XX AAR62692;
 AC
 XX 25-MAR-2003 (revised)
 DT 10-SEP-1995 (first entry)
 XX
 XX
 DE Helper T cell epitope for use in universal immune stimulator.
 XX
 XX Helper T cell epitope; universal immune stimulator; invasin; haptens;
 KW vaccine; tetanus toxin.
 XX
 OS Clostridium tetani.
 XX
 XX WO9425060-A1.
 PN
 XX
 PD 10-NOV-1994.
 XX
 XX 28-APR-1994; 94WO-US004832.
 PF
 XX 27-APR-1993; 93US-00057166.
 PR 14-APR-1994; 94US-00229275.
 XX
 XX (LADD/) LADD A E.
 PA (WANG/) WANG C Y.
 PA (ZAMB/) ZAMB T.
 XX
 XX Ladd AE, Wang CY, Zamb T;
 XX WPI; 1994-357910/44.
 DR
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.
 XX
 PS Claim 7; Page 25; 213pp; English.
 XX
 CC Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasin protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence represents a
 CC tetanus toxin helper T cell epitope which can be used as Th in the immune
 CC stimulator. (Updated on 25-MAR-2003 to correct PN field.)
 XX
 XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17
 |||||

RESULT 57
 AAR82573

ID AAR82573 standard; peptide; 17 AA.
 XX
 AC AAR82573;
 XX
 DT 13-JUN-1996 (first entry)
 XX
 XX Tetanus toxin helper T cell epitope, TT1.
 DE
 XX IgE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
 KW vaccine; allergy; antibody; constant heavy chain.
 XX
 OS Clostridium tetani.
 XX
 XX WO9526365-A1.
 PN
 XX 05-OCT-1995.
 PD
 XX 24-MAR-1995; 95WO-US003741.
 PF
 XX 28-MAR-1994; 94US-00218461.
 PR 25-OCT-1994; 94US-00328912.
 XX
 XX (UNBI-) UNITED BIOMEDICAL INC.
 PA
 XX Wang CY;
 XX WPI; 1995-351297/45.
 DR
 XX Synthetic peptide-based immunogen contg. IgE CH4 peptide and helper T
 PT cell epitope - useful for eliciting antibody prodn. for allergy
 PT treatment.
 XX
 XX Claim 3; Page 59; 87pp; English.
 PS
 XX AAR82571-91 are helper T cell epitopes which can be used in the
 CC preparation of a peptide immunogen that is useful in vaccines for
 CC treating allergic reactions. In the immunogen an IgE CH4 peptide is
 CC attached C-terminally to a series of amino acids including a helper T
 CC cell epitope. The immunogen may also opt. contain a fatty acid or fatty
 CC acid derivative, an invasin domain or alpha-NH2. The immunogen produces
 CC high titres of antibodies to the effector site in human IgE heavy chain
 CC (the CH4 domain peptide) which inhibit mast cell activation and reduce
 CC allergen-induced IgE prodn. The immunogens may be used in either a
 CC radially branching multimeric form or a linearly arranged monomeric form
 XX
 XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17
 |||||

RESULT 58
 AAR88395
 ID AAR88395 standard; peptide; 17 AA.
 XX
 AC AAR88395;
 XX
 DT 12-JUN-1996 (first entry)
 XX
 XX T-cell antigen TT2 peptide.
 DE
 XX T-antigen; vaccine; antibody; T-cell; T-lymphocyte; alpha-helix;
 KW coiled-coil heterodimer; core peptide; subunit.
 XX
 OS Synthetic.
 XX
 XX WO9531480-A1.
 PN
 XX

PD 23-NOV-1995.
 XX
 PF 18-MAY-1995; 95WO-CA000293.
 XX
 PR 18-MAY-1994; 94US-00245507.
 XX
 PA (SPIS-) SPI SYNTHETIC PEPTIDES INC.
 XX
 PI Houston ME, Zhou NE, Kay CM, Hodges RS, Cachia PJ, Irvin RT;
 XX
 DR WPI; 1996-010880/01.
 XX
 XX Hetero:dimeric polypeptide immunogen in coiled-coil configuration with
 PT different antigens on each sub:unit - useful in vaccines and for antibody
 PT prodn.
 XX
 PS Claim 7; Page 61; 95pp; English.
 XX
 CC This T-cell antigen TT2 peptide may be attached to a core peptide
 CC contained in one of the 2 subunits of an alpha-helical coiled-coil
 CC heterodimer. Each core peptide is comprised of terminal and internal AA
 CC repeat sequences. This peptide antigen is attached to the core peptide
 CC through covalent linkages to certain AA of the internal repeats. The 2
 CC subunits of the heterodimer are arranged in a stable alpha-helical coiled
 CC -coil configuration having a 1:1 stoichiometry, and the peptide antigen
 CC is disposed toward the outer surfaces of the configuration. The
 CC heterodimer may be used as a synthetic vaccine (optionally multivalent)
 CC or to generate antibodies
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 59
 AAW05599
 ID AAW05599 standard; peptide; 17 AA.
 XX
 AC AAW05599;
 XX
 DT 10-DEC-1996 (first entry)
 XX
 DE Tetanus toxin helper T cell epitope #1.
 XX
 KW Immunoglobulin; IGB; membrane protein; human; epsilon chain; hepatitis B;
 KW membrane anchoring domain; helper T cell; surface antigen; core antigen;
 KW pertussis toxin; tetanus toxin; measles virus F protein; immunotherapy;
 KW Chlamydia trachomatis major outer membrane protein; immunogen; vaccine;
 KW diphtheria toxin; plasmidium falciparum; circumsporozoite; E. coli TrAT;
 KW schistosoma mansoni; triose phosphate isomerase; allergenic reaction;
 KW allergic rhinitis; food allergy; anaphylaxis; virally-induced asthma;
 KW antihistamine; decongestant; beta-2 agonist; immunosuppression;
 KW corticosteroid.
 XX
 OS Synthetic.
 XX
 PN WO9612740-A1.
 XX
 PD 02-MAY-1996.
 XX
 PF 25-OCT-1995; 95WO-US013841.
 XX
 PR 25-OCT-1994; 94US-00328519.
 XX
 PA (UNBI-) UNITED BIOMEDICAL INC.
 XX
 PI Wang CY, Walfield AM;

XX WPI; 1996-230555/23.
 DR
 XX
 PT Peptide immunogen useful in treatment of allergy - comprises membrane-
 PT bound IGB epsilon-chain peptide synthesised linearly in tandem with T
 PT helper epitope peptide.
 XX
 PS Claim 2; Page 18; 53pp; English.
 XX
 CC AAW05957-W05616 represent helper T cell epitopes used in the peptide
 CC immunogens of the invention. This sequence represents the tetanus toxin
 CC helper T cell antigen. The peptides of the invention contain one of these
 CC sequences, and a membrane-bound immunoglobulin E (IGE) fragment (see
 CC AAW05595 and AAW05596). The peptide immunogens of the invention can be
 CC used in vaccines for the immunotherapeutic treatment of allergenic
 CC reactions, including allergic rhinitis, food allergies, anaphylaxis, or
 CC virally-induced asthma. The immunogens overcome the short effective
 CC period of antihistamines, decongestants, and beta-2 agonists, while
 CC preventing the broad immunosuppression of corticosteroids. The peptides
 CC do not have the potential side effects of restlessness or sedation
 CC (associated with antihistamines), associated increased morbidity in
 CC asthmatics (as seen with beta-2 agonists) and adverse hormonal activities
 CC (observed in corticosteroid users)
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 3 QYIKANSKFIGITEL 17
 RESULT 60
 AAY99274
 ID AAY99274 standard; peptide; 17 AA.
 XX
 AC AAY99274;
 XX
 DT 07-AUG-2000 (first entry)
 XX
 DE HLA class II binding antigen epitope peptide #463.
 XX
 KW Human leucocyte antigen; HLA class II; antigen epitope; pharmaceutical;
 KW immune response; chronic viral disease; cancer; autoimmune disease;
 KW rheumatoid arthritis; multiple sclerosis; myasthenia gravis; AIDS;
 KW allograft rejection; allergy; Lyme disease; hepatitis; prostate cancer;
 KW glomerulonephritis; food hypersensitivity; malaria.
 XX
 OS Unidentified.
 XX
 PN WO9961916-A1.
 XX
 PD 02-DEC-1999.
 XX
 XX 28-MAY-1999; 99WO-US012066.
 XX
 PR 29-MAY-1998; 98US-0087192P.
 XX
 PA (EPIM-) EPIMUNE INC.
 XX
 PI Sette A, Southwood S, Sidney J;
 XX
 DR WPI; 2000-097143/08.
 XX
 PT New compositions containing immunogenic peptide epitopes for various HLA
 PT class II DR molecules useful for inducing helper T cell response.
 XX
 PS Claim 1; Page 47; 60pp; English.
 XX
 CC The present invention relates to a new pharmaceutical composition

comprising a unit dose form of a peptide, or analogue, comprising an epitope selected from those represented by peptides AAY8812-Y99339 which are derived from various antigens for various human leucocyte antigen class DR molecules, representative of the world wide population. The peptide/analogue binds to an HLA class II molecule at an IC-50 of less than or equal to 1,000 nM. The pharmaceutical can be used to induce a helper T cell response. The pharmaceutical focuses the immune response towards selected determinants and could therefore be used in cases of chronic viral diseases and cancer. Examples of diseases that can be treated using the peptide containing pharmaceutical include autoimmune diseases (rheumatoid arthritis, multiple sclerosis, and myasthenia gravis), allograft rejection, allergies, Lyme disease, hepatitis, post-streptococcal endocarditis or glomerulonephritis and food hypersensitivities. The peptide epitopes can be used to enhance immune responses against other immunogens administered with the peptides. Diseases which can be treated using immunogenic mixtures include prostate cancer, hepatitis B, hepatitis C, AIDS, renal carcinoma, cervical carcinoma, lymphoma, and condyloma acuminatum. The peptides may also be used to make monoclonal antibodies useful as potential diagnostic or therapeutic agents. The peptides may also be useful as diagnostic reagents, for example, to determine the susceptibility of an individual to a treatment regimen. Also, the peptides may be used to predict which individuals will be at substantial risk of developing chronic infection. The selection of appropriate T and B cell epitopes should allow the development of epitope based vaccines particularly towards conserved epitopes of pathogens which are characterized by high sequence variability such as HIV, HCV and Malaria

SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 1 QYIKANSKFIGITEL 15

RESULT 61

AA58768
ID AAY58768 standard; peptide; 17 AA.

AC AAY58768;

DT 25-APR-2000 (first entry)

XX Unidentified peptide.

DE Helper T cell; Th epitope; feed additive; growth promotion; somatostatin.

XX Unidentified.

XX WO9966950-A1.

XX 29-DEC-1999.

XX 21-JUN-1999; 99WO-US013923.

XX 20-JUN-1998; 98US-00100415.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 2000-160560/14.

XX New somatostatin helper T-cell epitope conjugate for raising anti-somatostatin antibodies to enhance growth rate in animal by reducing growth inhibitory activity of somatostatin.

XX Disclosure; Page 50-51; 59pp; English.

CC The present sequence is that of an unidentified peptide of the invention.
CC The invention relates to peptide compositions (see AAY58739-66) useful as immunogens for growth promotion in farm animals. The immunogenic peptides contain helper T cell epitopes which comprise multiple class II MHC motifs and have somatostatin at either the C- or N-terminus. They may also include an invasin domain which acts as a general immune stimulator. The helper T cell epitopes and the invasin domain enhance the immune response against the somatostatin self-peptide

SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 3 QYIKANSKFIGITEL 17

RESULT 62

AA80056
ID AAY80056 standard; peptide; 17 AA.

XX AAY80056;

XX 15-MAY-2000 (first entry)

XX Pathogen derived Th epitope SEQ ID NO:63.

XX Immunoglobulin E; IGE; epsilon heavy chain; antigenic; antigen;
KW immunogenic; immunostimulatory; carrier protein; helper T cell epitope;
KW antibody; allergy; allergic disease; immunisation; anti-allergic;
KW anti-anaphylactic; anti-asthmatic; asthma; anaphylaxis; dermatitis.

XX Unidentified.

XX WO9967293-A1.

XX 29-DEC-1999.

XX 21-JUN-1999; 99WO-US013959.

XX 20-JUN-1998; 98US-00100287.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY, Walfield AM;

XX WPI; 2000-160578/14.

XX New antigenic peptide from the CH3 domain of immunoglobulin E, fusions for immunization against allergy.

XX Claim 11; Page 79; 155pp; English.

CC The present invention describes immunoglobulin E (IGE)-CH3 domain antigenic peptides (I). (i) have anti-allergic, anti-anaphylactic and anti-asthmatic properties. (i) induces polyclonal antibodies specific for a target effector site on the epsilon-heavy chain of IGE, and so preventing triggering and activation of mast cells and basophils and downregulation of IGE synthesis. Conjugates, or fusion peptides, containing (I) are used for active immunisation against IGE-mediated allergies, e.g. food allergies, asthma, anaphylaxis, or flea-allergy dermatitis. Nucleic acids that encode these compounds are useful for recombinant production of corresponding peptides or in DNA vaccines. Conjugates of (I) that include a promiscuous T helper cell epitope (functional in genetically diverse subjects), in addition to a B cell target epitope, have increased immunogenicity and may include cyclic constraints (disulfide bridge) to stabilise conformational features and maximize cross-reactivity to the natural target. They induce safe (non-anaphylactogenic) antibodies. AAY79994 to AAY80084 represent amino acid sequences used in the exemplification of the present invention


```

XX 07-DEC-2001 (first entry)
XX DT
XX DE
XX DE Vaccine related MHC ligand peptide SEQ ID NO:619.
XX KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
XX KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
XX KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
XX KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
XX KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
XX KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;
XX KW human immunodeficiency virus.
XX OS Clostridium tetani.
XX PN WO200170772-A2.
XX PF 27-SEP-2001.
XX PR 22-MAR-2001; 2001WO-FR000872.
XX PR 23-MAR-2000; 2000FR-00003711.
XX PR (FABR ) FABRE MEDICAMENT SA PIERRE.
XX PA Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;
XX PI WPI; 2001-611470/70.
XX DR
XX PT Stabilized pharmaceutical containing N-terminal glutamic acid or
XX PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
XX PT with strong acid.
XX PS Claim 9; Page 136; 149pp; French.
XX
XX The present invention describes a pharmaceutical compound (I) that
XX contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
XX the form of an addition salt with a strong, physiologically acceptable
XX acid (II). Also described are: (a) a pharmaceutical composition
XX containing at least one (I); (b) a vaccine containing at least one (I)
XX where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
XX method for in vitro diagnosis of diseases associated with the presence of
XX (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
XX for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
XX neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
XX cytostatic activities. (I) are useful, in human or veterinary medicine,
XX in pharmaceutical compositions (for treating immune disorders, e.g.
XX immune deficiency, autoimmune states, hypersensitivity, allergy, graft
XX rejection, infection, hormonal disorders and central nervous system
XX diseases), also, where (I) is a MHC ligand (Ia), in vaccines for
XX treatment or prevention of: (i) viral, bacterial, parasitic or fungal
XX infections; or (ii) of cancers. A particular application is in anti-
XX melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
XX associated with interactions between MHC and (I), e.g. melanoma and human
XX immunodeficiency virus infection. AAM98898 to AAM99592 represent peptides
XX which can be used in pharmaceutical compounds from the present invention
XX
XX Sequence 17 AA;
XX
XX Query Match 100.0%; Score 74; DB 4; Length 17;
XX Best Local Similarity 100.0%; Pred. No. 1.1e-06;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX |||||
XX Db 1 QYIKANSKFIGITEL 15
XX
XX RESULT 66
XX AAB84435
XX ID AAB84435 standard; peptide; 17 AA.
XX AC AAB84435;

```

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XX 22-AUG-2001 (first entry)
XX DT
XX DE Amino acid sequence of T helper cell epitope of tetanus toxin.
XX KW Beta-amyloid precursor protein; APP; chimeric peptide; B cell epitope;
XX KW vaccine; T helper cell epitope.
XX OS Clostridium tetani.
XX PN WO200142306-A2.
XX PF 14-JUN-2001.
XX PR 08-DEC-2000; 2000WO-US033203.
XX PR 08-DEC-1999; 99US-0169687P.
XX PR (MIND-) MINDSET BIOPHARMACEUTICALS USA INC.
XX PI Chain B;
XX PI WPI; 2001-381648/40.
XX DR
XX Novel chimeric peptide containing N- or C-terminal end-specific B cell
XX epitope from naturally occurring internal peptide cleavage product (such
XX as beta amyloid peptide) of a precursor protein, joined to T cell
XX epitope.
XX PS Claim 8; Page 43; 47pp; English.
XX
XX The present sequence represents a T helper cell epitope, which is used to
XX create chimeric peptides of the invention. The chimeric peptides contain
XX a N- or C-terminal end-specific B cell epitope from a naturally occurring
XX internal peptide cleavage product of a precursor or mature protein, as a
XX free N- or C-terminus, joined to a T cell epitope, with or without a
XX spacer amino acid residue. Chimeric peptides comprising beta-amyloid
XX accumulation of amyloid beta peptide in the extracellular space,
XX interstitial fluid and cerebrospinal fluid of the brain, and aggregation
XX into senile amyloid deposits or plaques. They also block the interaction
XX of amyloid beta peptides with other molecules that contribute the
XX neurotoxicity of amyloid beta. The chimeric peptides are useful for
XX immunizing humans against the free N- or C-terminus of an internal self
XX peptide cleavage product (e.g. APP peptide) derived from a precursor
XX protein or a mature protein. The internal peptide cleavage product is the
XX self molecule of the mammal
XX
XX Sequence 17 AA;
XX
XX Query Match 100.0%; Score 74; DB 4; Length 17;
XX Best Local Similarity 100.0%; Pred. No. 1.1e-06;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX |||||
XX Db 3 QYIKANSKFIGITEL 17
XX
XX RESULT 67
XX AAB30941
XX ID AAB30941 standard; peptide; 17 AA.
XX AC AAB30941;
XX AC AAB30941;
XX DT 02-APR-2001 (first entry)
XX DE
XX DE Amino acid sequence of peptide derived from tetanus protein.
XX KW Polypeptidic peptide; E6 protein; E7 protein; HPV; CD4 epitope;
XX KW T helper cell; human leukocyte antigen; HLA; immune response; cytotoxic;
XX KW cytotoxic T cell; CTL; cytokine secretion; interleukin-2; IL-2; IL-4;
XX KW gamma-interferon; HPV infection; cervical neoplasia; invasive cancer;

```

KW vulvar intraepithelial neoplasia.
 OS Clostridium tetani.
 XX
 XX
 PN FR2794371-A1.
 XX
 XX 08-DEC-2000.
 XX
 PF 07-OCT-1999; 99FR-00012511.
 XX
 PR 03-JUN-1999; 99FR-00007012.
 XX
 XX (BIOV-) BIOVECTOR THERAPEUTICS SA.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX
 XX Choppin J, Bourgault VI, Guillet JG, Connan F, Ferries E;
 XX WPI; 2001-064175/08.
 XX
 PT New polypeptidic fragments from human papilloma virus E6 and E7 proteins,
 PT useful for treatment or prevention of e.g. cervical neoplasia and cancer.
 XX
 XX Disclosure; Page 12; 27pp; French.
 XX
 CC The present sequence is derived from a tetanus protein, and is included
 CC in vaccines of the invention. The specification describes polypeptidic
 CC fragments from the E6 and E7 proteins of human papilloma virus (HPV). The
 CC HPV peptides include CD4 epitopes recognised by T helper cells. They bind
 CC stably to human leukocyte antigen (HLA) type molecules. The HPV peptides
 CC induce a specific immune response, particularly cytotoxicity, caused by
 CC cytotoxic T cells (CTL). They also induce secretion of cytokines
 CC (particularly interleukin-2 (IL-2) and IL-4, and gamma-interferon) by
 CC CTL. The HPV peptides, their derivatives, nucleic acids encoding them and
 CC specific antibodies are used, in compositions or vaccines, to treat or
 CC prevent diseases associated with HPV infection, e.g. cervical or vulvar
 CC intraepithelial neoplasia and invasive cancer of the cervix uteri. The
 CC antibodies are also useful for in vitro diagnosis of these diseases
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 68
 AAB31029
 ID AAB31029 standard; peptide; 17 AA.
 XX
 AC AAB31029;
 XX
 DT 02-APR-2001 (first entry)
 XX
 DE Antigenic fragment of tetanus protein.
 XX
 KW Polypeptidic fragment; Nef protein; HIV; human leukocyte antigen; HLA;
 KW immune response; cytotoxicity; cytotoxic T cell; CTL; cytokine secretion;
 KW interleukin-2; IL-2; IL-4; gamma-interferon; vaccine; HPV; tetanus;
 KW acquired immune deficiency syndrome.
 XX
 OS Clostridium tetani.
 XX
 PN FR2794370-A1.
 XX
 PD 08-DEC-2000.
 XX
 PF 03-JUN-1999; 99FR-00007012.
 XX
 PR 03-JUN-1999; 99FR-00007012.

XX (BIOV-) BIOVECTOR THERAPEUTICS SA.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX
 XX Choppin J, Bourgault VI, Guillet JG, Connan F, Ferries E;
 XX WPI; 2001-064174/08.
 XX
 PT New polypeptidic fragments from Nef protein of the human immune
 PT deficiency virus, useful for treatment or prevention of acquired immune
 PT deficiency syndrome.
 XX
 XX Disclosure; Page 6; 24pp; French.
 XX
 CC The present sequence represents an antigenic fragment of tetanus protein,
 CC which is included in vaccines of the invention. The specification
 CC describes polypeptidic fragments from the Nef protein of human immune
 CC deficiency virus (HIV). The Nef peptides bind stably to human leukocyte
 CC antigen (HLA) type molecules. The Nef peptides induce a specific immune
 CC response. Particularly, they induce cytotoxicity, by cytotoxic T cells
 CC (CTL), of cells that express Nef associated with appropriate HLA
 CC molecules and induce secretion of cytokines (particularly interleukin
 CC (IL)-2 and IL-4, and gamma-interferon by these CTL. The Nef peptides,
 CC their derivatives, nucleic acids encoding them and specific antibodies
 CC are used, in compositions or vaccines, to treat or prevent diseases
 CC associated with human immunodeficiency virus (HIV) infection,
 CC specifically acquired immune deficiency syndrome. The antibodies are also
 CC useful for in vitro diagnosis of these diseases
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 69
 AAG62904
 ID AAG62904 standard; peptide; 17 AA.
 XX
 AC AAG62904;
 XX
 DT 17-SEP-2001 (first entry)
 XX
 DE Amino acid residues 830-846 of tetanus toxin.
 XX
 KW tetanus toxin; T cell epitope; CD8 response; Th1 type immune response;
 KW Th1 CD4-specific T lymphocyte; infection; cytotoxic T lymphocyte; CTL;
 KW antiretroviral therapy.
 XX
 OS Clostridium tetani.
 XX
 FH Key Location/Qualifiers
 FT Modified-site 1 /note= "acetylated residue"
 FT Modified-site 17 /note= "-CONH2 attached"
 FT
 XX WO200149821-A2.
 XX
 PD 12-JUL-2001.
 XX
 XX 28-DEC-2000; 2000WO-FR003708.
 PF
 XX 30-DEC-1999; 99FR-00016716.
 PR
 XX (CNRS) CNRS CENT NAT RECH SCI.
 PA (INSP) INST PASTEUR LILLE.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.

PA (SEDA-) SEDAC SOC ETUD & DEV ANTIGENES COMBINATO.
 PI Pancre V, Gras-Masse H, Bouzidi A, Hachulla E, Auriault C;
 XX
 XX
 DR WPI; 2001-441868/47.
 XX
 DR CD4-specific T lymphocytes of Th1 type, useful in immunotherapy of
 PT infections, specifically by human immunodeficiency virus.
 XX
 PS Example 3; Page 13; 18pp; French.
 XX
 CC The present sequence represents a peptide, comprising residues 830-846 of
 CC tetanus toxin. The peptide is a T cell epitope. The peptide induces a Th1
 CC type immune response, and is used to produce a Th1 CD4-specific T
 CC lymphocyte cell line. To produce the cell lines, CD4+ T cells are
 CC isolated from a donor sample, and are subjected to in vitro immunisation
 CC with T cell epitopes, in the presence of dendritic cells. The cell lines
 CC of the invention induce cytotoxic T lymphocytes (CTL), i.e. a CD8
 CC response, against infectious agents such as viruses, bacteria and
 CC parasites. The cell lines are used to prevent or treat infections caused
 CC by viruses, bacteria and parasites, specifically human immune deficiency
 CC virus (HIV), especially in combination with highly active antiretroviral
 CC therapy, to restore the Th1 response. Treatment with the composition
 CC causes a marked and rapid reduction in viremia but does not eradicate the
 CC virus
 XX
 SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 70
 AAB15589
 ID AAB15589 standard; peptide; 17 AA.
 XX
 AC AAB15589;
 XX
 DT 02-MAR-2001. (first entry)
 XX
 DE Peptide 5 for peptides containing alpha-oxoaldehyde group.
 XX
 KW Solid supports; alpha-oxoaldehyde group; glyoxylic acid derivative;
 KW vaccine; macromolecule; microtitration plate.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Modified-site 1 /note= "Acylyated N-terminus"
 FT
 XX
 PN FR2792631-A1.
 XX
 PD 27-OCT-2000.
 XX
 XX 21-APR-1999; 99FR-00005024.
 XX
 PR 21-APR-1999; 99FR-00005024.
 XX
 XX (INSP) INST PASTEUR LILLE.
 FA (CNRS) CNRS CENT NAT RECH SCI.
 XX
 PI Melnyx O, Fruchart JS, Bourel L, Gras MH;
 XX
 DR WPI; 2001-094357/11.
 XX
 XX Solid supports for the synthesis of compounds having an alpha-oxo-
 PT aldehyde group and peptides, made by solid phase synthesis using such

PT supports.
 XX
 PS Example 4; Fig 3; 86pp; French.
 XX
 CC The invention relates to solid supports, functionalized for the synthesis
 CC of compounds having an alpha-oxo-aldehyde group, a process for the
 CC synthesis of such compounds. The invention also covers peptides having an
 CC alpha-oxoaldehyde group situated in a position other than a N-terminal
 CC extremity and not being linked through amide to an amine on a side chain
 CC of lysine or ornithine, prepared using a support of the invention. This
 CC sequence represents an example of a peptide used in the method of the
 CC invention. Solid phase synthesis of alpha-oxoaldehyde peptides and other
 CC organic molecules such as non-peptidic derivatives of glyoxylic acid.
 CC Such products are themselves useful in the pharmaceutical industry for
 CC synthetic vaccines, synthesis of macromolecules, and microtitration
 CC plates
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 71
 AAE35609
 ID AAE35609 standard; peptide; 17 AA.
 XX
 AC AAE35609;
 XX
 DT 17-JUN-2003 (first entry)
 XX
 DE Clostridium tetani T helper cell epitope #1.
 XX
 KW Immunogen; helper T cell; Th epitope; amyloid beta; Alzheimer's disease;
 KW Abeta; AD; brain tissue plaque; immunoneutralisation; neuroprotective;
 KW vaccine; nootropic.
 XX
 OS Clostridium tetani.
 XX
 PN WO200296350-A2.
 XX
 PD 05-DEC-2002.
 XX
 XX 02-APR-2002; 2002WO-US010293.
 XX
 PR 25-MAY-2001; 2001US-00865294.
 XX
 PA (UNBI-) UNITED BIOMEDICAL INC.
 XX
 XX Wang CY;
 XX
 WPI; 2003-201258/19.
 XX
 PT Novel peptide immunogen comprising a helper T cell epitope, an N-terminal
 PT fragment of amyloid beta peptide linked to the epitope, and optionally a
 PT spacer, useful for preventing or treating Alzheimer's disease.
 XX
 PS Claim 1; Page 36; 77pp; English.
 XX
 CC The present invention relates to a novel peptide immunogen comprising a
 CC helper T cell (Th) epitope, an N-terminal fragment of amyloid beta
 CC (Abeta) peptide (residues 1-42) linked to the epitope and optionally a
 CC spacer consisting of at least an amino acid to separate the immunogenic
 CC domains. Sequences of the invention are useful for preventing or treating
 CC Alzheimer's disease (AD) in a mammal, to produce antibodies to Abeta
 CC peptide that is cross-reactive to soluble Abeta peptides and brain tissue
 CC plaques formed from it. They are useful for eliciting a site-directed
 CC mutagenesis against the main functional/regulatory site of the Abeta

CC peptide and for generating antibodies, which are highly cross-reactive to
 CC the soluble Abeta peptide and the amyloid plaques formed in the brain of
 CC Alzheimer's disease patients. The sequences are useful for induction of
 CC accelerated clearance of amyloid plaques and immunoneutralisation of the
 CC soluble Abeta derived toxins in the brain to prevent and treat
 CC Alzheimer's disease. They are also useful as vaccines. The present
 CC sequence is Clostridium tetani T helper (Th) cell epitope used in the
 CC exemplification of the invention
 XX
 SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 6; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 3 QYIKANSKFIGITEL 17

RESULT 72
 ADA09238
 ID ADA09238 standard; peptide; 17 AA.
 XX
 AC ADA09238;

XX
 XX 06-NOV-2003 (first entry)
 DT
 XX Tetanus toxoid peptide.

XX preproinsulin; type I diabetes; T-cell; proinsulin peptide; cytokine;
 KW insulinitis.
 XX
 XX Clostridium tetani.

XX US6509165-B1.
 XX 21-JAN-2003.
 XX

XX 06-JUN-1995; 95US-00472701.
 XX 08-JUL-1994; 94US-00272220.
 XX

XX (DART-) DARTMOUTH COLLEGE.

XX Griffin AC, Hickey WF;

XX WPI; 2003-595984/56.

XX Diagnosing Type-1 diabetes, by contacting patient sample comprising T-
 PT cells with proinsulin peptide and detecting the ability of peptide to
 PT stimulate T-cells by measuring ability of T-cells to proliferate or
 PT produce cytokines.

XX Example 3; Col 25-26; 27pp; English.

XX The invention relates to diagnosing Type-1 diabetes in a subject,
 CC comprising obtaining a biological sample comprising T-cells from a
 CC subject, contacting a biological sample in vitro with a proinsulin
 CC peptide and detecting the ability of the proinsulin peptide to
 CC preferentially stimulate the T-cells of diabetic patients by measuring
 CC the ability of the T-cells to proliferate or ability of the T-cells to
 CC produce cytokines. The method is useful for diagnosing Type-1 diabetes in
 CC a subject. The diagnosis method is rapid and accurate. The present
 CC sequence represents a tetanus toxoid peptide used as a control in an
 CC experiment designed to detect proinsulin peptide reactive T-cells in the
 CC blood of type I diabetic patients.
 XX

SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 6; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 3 QYIKANSKFIGITEL 17

RESULT 73

ADM80624
 ID ADM80624 standard; peptide; 17 AA.

XX
 AC ADM80624;

XX
 DT 03-JUN-2004 (first entry)

XX Human helper T cell epitope peptide SEQ ID NO:5.

XX amyloid beta; Abeta(4-10); helper T cell epitope; neuroprotective;
 KW neurotropic; Alzheimer's disease; amyloid deposit; brain; amyloid fibril.

XX Homo sapiens.

XX WO2003089460-A1.

XX 30-OCT-2003.

XX 07-APR-2003; 2003WO-CA000502.

XX 19-APR-2002; 2002US-0373914P.

XX (UTOR) UNIV TORONTO GOVERNING COUNCIL.

XX St George- Hyslop P, McLauring J;

XX WPI; 2003-903280/82.

XX New immunogenic peptide Abeta(4-10), useful in preparing a composition
 PT for treating Alzheimer's disease.

XX Claim 2; SEQ ID NO 5; 86pp; English.

XX The invention relates to a novel peptide represented by formula (I) given
 CC below. The new peptide is represented by formula (I): (A) n -(Th) m -(B)
 CC o -Abeta(4-10)-(C) p where each of A, B and C are an amino acid residue
 CC or sequence of amino acid residues; n, o or p = 0-20, when o is 0 then Th
 CC is directly connected to the B cell epitope Abeta(4-10) through a peptide
 CC bond without any spacer residue; Th is a sequence of amino acid residues
 CC that comprises a helper T cell epitope or its immune enhancing analogue
 CC or segment; m = 0-5; Abeta(4-10) is Phe-Arg-His-Asp-Ser-Gly-Tyr
 CC (ADM80621) or its analogue containing a conservative substitution. A
 CC peptide of the invention has neuroprotective and neurotropic activity. The
 CC peptide is useful in preparing a composition for treating Alzheimer's
 CC disease. Specifically, the methods are useful for reducing the amount of
 CC amyloid deposits in the brain of an individual afflicted with Alzheimer's
 CC disease, disaggregating the amyloid fibrils in the brain of an individual
 CC afflicted with Alzheimer's disease and determining if a compound is an
 CC inhibitor of amyloid deposition and fibril formation. The present
 CC sequence represents a helper T cell epitope peptide of the invention.

SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 7; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 3 QYIKANSKFIGITEL 17

RESULT 74

ADG74074
 ID ADG74074 standard; peptide; 17 AA.

XX

AC ADG74074;
 XX
 DT 11-MAR-2004 (first entry)
 XX
 DE Tetanus immunostimulatory epitope P2 TT 830-846.
 XX
 KW Epitope; virus-like particle; vaccine.
 XX
 OS Clostridium tetani.
 XX
 XX WO2003103605-A2.
 PN
 XX 18-DEC-2003.
 PD
 XX 06-JUN-2003; 2003WO-US018247.
 XX
 PF 07-JUN-2002; 2002US-0386921P.
 PR
 XX (LARG-) LARGE SCALE BIOLOGY CORP.
 PA
 XX McCormick AA, Smith ML, Palmer KE, Lindbo JA, Nguyen LV;
 PI Pogue GP;
 PI
 XX WPI; 2004-062210/06.
 DR
 XX Preparing a virus-like particle (VLP), useful as a vaccine, an anti-
 PT allergy medication or a diagnostic reagent, comprises disassembling a
 PT tobacco mosaic virus and forming intact VLP of one or more encapsidation
 PT intermediates.
 XX
 XX Example 1; SEQ ID NO 14; 86pp; English.
 PS
 XX The invention provides a method for generating virus-like particle (VLP)
 CC vaccines in an adaptable, predictable, stable and scaleable manner.
 CC Methods are provided for making vaccines made of re-assembled VLPs.
 CC First, the VLPs are disassembled into encapsidation intermediate
 CC populations. Each encapsidation intermediate population undergoes e.g.
 CC chemical conjugation of unique peptide or nucleic acid moieties to form
 CC separate populations. A predetermined amount of each of the several (one
 CC or more) different encapsidation intermediates from the different
 CC populations is mixed and joined, forming intact VLPs, surrounding a
 CC nucleic acid core, that are composed of different encapsidation
 CC intermediates such that the reassembled VLP displays more than one
 CC peptide or nucleic acid. The nucleic acid can function as a scaffold and
 CC can also be engineered to express an immunomodulatory protein in a
 CC eukaryotic cell. The VLP is useful as a vaccine against viral or
 CC bacterial pathogens, an anti-allergy medication, and a diagnostic reagent
 CC or a combinatorial chemistry reagent (all claimed). Tobacco mosaic virus
 CC (TMV) was used as a VLP carrier in examples from the invention, in which
 CC epitope sequences were fused in-frame to the TMV U1 coat protein. TMV
 CC VLPs were reassembled in vitro decorated with a single epitope
 CC (monovalent) or with a collection of different epitopes (multivalent).
 CC The present sequence is that of tetanus toxoid immunostimulatory peptide,
 CC P2 TT 830-846. Attempts to express this in-frame with U1 as a soluble
 CC protein were unsuccessful.
 XX
 XX Sequence 17 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 1 QYIKANSKFIGITEL 15
 RESULT 75
 ADJ25950
 ID ADJ25950 standard; peptide; 17 AA.
 XX
 AC ADJ25950;
 XX

DT 20-MAY-2004 (first entry)
 XX
 DE Tetanus toxoid peptide.
 XX
 KW antidiabetic; immunosuppressive; type I diabetes; proinsulin;
 KW immunological response; T cell; preproinsulin; tetanus toxoid.
 XX
 OS Clostridium tetani.
 XX
 XX US2004002113-A1.
 PN
 XX 01-JAN-2004.
 PD
 XX 17-DEC-2002; 2002US-00321717.
 XX
 PF 08-JUL-1994; 94US-00272220.
 PR
 XX 06-JUN-1995; 95US-00472701.
 XX
 XX (DART-) DARTMOUTH COLLEGE.
 PA
 XX Griffin AC, Hickey WF;
 PI
 XX WPI; 2004-178909/17.
 DR
 XX
 XX Detecting indicator of type I diabetes in subject, by contacting sample
 PT with proinsulin peptide compound stimulating immunological response,
 PT detecting immunological activity in sample against proinsulin peptide.
 XX
 XX Example 3; SEQ ID NO 23; 27pp; English.
 PS
 XX The invention describes a method of detecting an indicator (I) of type I
 CC diabetes in a subject. The method comprises obtaining a biological sample
 CC from the subject, contacting the sample with a proinsulin peptide
 CC compound (II) which stimulates an immunological response by T cells of
 CC type I diabetic subjects and detecting an immunological activity in the
 CC sample against (II) in the subject. The method is useful for detecting an
 CC indicator of type I diabetes in a subject. Also described is a method is
 CC useful for inhibiting the development or progression of type I diabetes
 CC in a subject. This is the amino acid sequence of a tetanus toxoid peptide
 CC associated with the study of proinsulin peptide reactive T cells.
 XX
 XX Sequence 17 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 3 QYIKANSKFIGITEL 17
 RESULT 76
 AAY26607
 ID AAY26607 standard; peptide; 18 AA.
 XX
 XX AAY26607;
 XX
 XX 14-SEP-1999 (first entry)
 DT
 XX HIV-derived lipopeptide epitope TT for mixed micelles.
 DE
 XX Micelle; microaggregate; induction; immune response; lipopeptide; CTL;
 KW cytotoxic T-lymphocyte; epitope; lipid; helper T-lymphocyte; HTL; HBV;
 KW tetanus; toxin; vaccine; HIV; hepatitis B virus; papilloma virus; p53;
 KW melanoma; Plasmodium falciparum; malaria.
 XX
 XX Synthetic.
 OS
 OS Human immunodeficiency virus 1.
 XX
 XX FR2771640-A1.
 PN
 XX 04-JUN-1999.
 PD

XX 03-DEC-1997; 97FR-00015246.
 XX 03-DEC-1997; 97FR-00015246.
 XX (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX (CNRS) CNRS CENT NAT RECH SCI.
 XX (INSP) INST PASTEUR LILLE.
 XX
 XX Gras MH, Bossus M, Lippens G, Wieruszski JM, Tartar A;
 XX Guillet JG, Bourgault Vi;
 XX WPI; 1999-349509/30.
 XX Immunogenic lipopeptide micelles - comprising lipopeptides containing
 XX cytotoxic and helper T-lymphocyte epitopes.
 XX Claim 11; Page 47; 60pp; French.
 XX The invention relates to the generation of mixed micelles or
 XX microaggregates for inducing an immune response comprise: (a) a first
 XX lipopeptide comprising at least one CTL (cytotoxic T-lymphocyte) epitope
 XX and at least one lipid unit; and (b) a second lipopeptide comprising at
 XX least one HTL (helper T-lymphocyte) epitope and at least one lipid unit
 XX different from that of the first lipopeptide. This peptide represents an
 XX example of a lipopeptide epitope used in the invention and is derived
 XX from HIV-1. The immunogenic lipopeptide micelles are used in vaccines,
 XX especially against HIV, hepatitis B virus (HBV), papilloma viruses, p53,
 XX melanoma or Plasmodium falciparum malaria
 XX
 XX Sequence 18 AA;
 XX
 XX Query Match 100.0%; Score 74; DB 2; Length 18;
 XX Best Local Similarity 100.0%; Pred. No. 1.2e-06;
 XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 QYIKANSKFIGITEL 15
 XX |||||
 XX Db 1 QYIKANSKFIGITEL 15
 XX |||||
 XX
 XX RESULT 77
 XX ABB09794
 XX ID ABB09794 standard; peptide; 18 AA.
 XX AC ABB09794;
 XX
 XX 22-JUL-2002 (first entry)
 XX Peptide TT functionalised by alpha-hydrazinoacetyl groups.
 XX Lipophilic vector; aldehyde; hydrazone; cell screening;
 XX hormone targeting; neuropeptide.
 XX Synthetic.
 XX
 XX Key Location/Qualifiers
 XX Modified-site 1 /note= "H attached"
 XX Modified-site 18 /note= "COCH2NHNH2 attached to amidated residue"
 XX
 XX WO200220558-A2.
 XX 14-MAR-2002.
 XX 07-SEP-2001; 2001WO-FR002787.
 XX 08-SEP-2000; 2000FR-00011451.
 XX (INSP) INST PASTEUR LILLE.
 XX (CNRS) CNRS CENT NAT RECH SCI.
 XX

PI Bonnet D, Bourel L, Melnyk O;
 XX WPI; 2002-329866/36.
 XX Peptides linked to lipophilic aldehyde vectors enable hormones and
 XX neuropeptides to pass through physiological barriers.
 XX Example; Page 16; 56pp; French.
 XX The specification describes a process for binding a peptide to a
 XX lipophilic vector having an aldehyde function, through formation of a
 XX hydrazone, in solution. The lipophile is non-peptidic and is of a formula
 XX given in the specification. The lipid-peptide bond is stable and the
 XX process is simpler to carry out than known methods, being in solution
 XX with a totally deprotected peptide. The method is used for cell screening
 XX and targeting of hormones and neuropeptides through physiological
 XX barriers e.g. cell membranes. The present peptide is functionalised by
 XX alpha-hydrazinoacetyl groups, and is used in the course of the invention
 XX
 XX Sequence 18 AA;
 XX
 XX Query Match 100.0%; Score 74; DB 5; Length 18;
 XX Best Local Similarity 100.0%; Pred. No. 1.2e-06;
 XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 QYIKANSKFIGITEL 15
 XX |||||
 XX Db 1 QYIKANSKFIGITEL 15
 XX |||||
 XX
 XX RESULT 78
 XX AAY99055
 XX ID AAY99055 standard; peptide; 19 AA.
 XX AC AAY99055;
 XX 07-AUG-2000 (first entry)
 XX HLA class II binding antigen epitope peptide #244.
 XX Human leucocyte antigen; HLA class II; antigen epitope; pharmaceutical;
 XX immune response; chronic viral disease; cancer; autoimmune disease;
 XX rheumatoid arthritis; multiple sclerosis; myasthenia gravis; AIDS;
 XX allograft rejection; allergy; Lyme disease; hepatitis; prostate cancer;
 XX glomerulonephritis; food hypersensitivity; malaria.
 XX Clostridium tetani.
 XX WO9961916-A1.
 XX 02-DEC-1999.
 XX 28-MAY-1999; 99WO-US012066.
 XX 29-MAY-1998; 98US-0087192P.
 XX (EPIM-) EPIMUNE INC.
 XX Sette A, Southwood S, Sidney J;
 XX WPI; 2000-097143/08.
 XX New compositions containing immunogenic peptide epitopes for various HLA
 XX class II DR molecules useful for inducing helper T cell response.
 XX Claim 1; Page 44; 60pp; English.
 XX The present invention relates to a new pharmaceutical composition
 XX comprising a unit dose form of a peptide, or analogue, comprising an
 XX epitope selected from those represented by peptides AAY9812-Y99339 which
 XX are derived from various antigens for various human leucocyte antigen
 XX class DR molecules, representative of the world wide population. The
 XX peptide/analogue binds to an HLA class II molecule at an IC-50 of less

than or equal to 1,000 nM. The pharmaceutical can be used to induce a helper T cell response. The pharmaceutical focuses the immune response towards selected determinants and could therefore be used in cases of chronic viral diseases and cancer. Examples of diseases that can be treated using the peptide containing pharmaceutical include autoimmune diseases (rheumatoid arthritis, multiple sclerosis, and myasthenia gravis), allograft rejection, allergies, Lyme disease, hepatitis, post-streptococcal endocarditis or glomerulonephritis and food hypersensitivities. The peptide epitopes can be used to enhance immune responses against other immunogens administered with the peptides. Diseases which can be treated using immunogenic mixtures include prostate cancer, hepatitis B, hepatitis C, AIDS, renal carcinoma, cervical carcinoma, lymphoma, and condyloma acuminatum. The peptides may also be used to make monoclonal antibodies useful as potential diagnostic or therapeutic agents. The peptides may also be useful as diagnostic reagents, for example, to determine the susceptibility of an individual to a treatment regimen. Also, the peptides may be used to predict which individuals will be at substantial risk of developing chronic infection. The selection of appropriate T and B cell epitopes should allow the development of epitope based vaccines particularly towards conserved epitopes of pathogens which are characterized by high sequence variability such as HIV, HCV and Malaria

XX SQ Sequence 19 AA;

Query Match 100.0%; Score 74; DB 3; Length 19;
Best Local Similarity 100.0%; Pred. No. 1.2e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 3 QYIKANSKFIGITEL 17
|||||

RESULT 79

ADH099517
ID AAM99517 standard; peptide; 19 AA.

XX AC AAM99517;

XX DT 07-DEC-2001. (first entry)

XX DE Vaccine related MHC ligand peptide SEQ ID NO:620.

XX KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC; immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal; bactericidal; antiparasitic; fungicidal; cytostatic; medicine; pharmaceutical; immune disorder; immune deficiency; autoimmune; hypersensitivity; allergy; graft rejection; infection; hormonal disorder; central nervous system disease; cancer; melanoma; anti-melanoma vaccine; human immunodeficiency virus.

XX OS Clostridium tetani.

XX PN WO200170772-A2.

XX PD 27-SEP-2001.

XX PF 22-MAR-2001; 2001WO-FR000872.

XX PR 23-MAR-2000; 2000FR-00003711.

XX PA (FABR) FABRE MEDICAMENT SA PIERRE.

XX PI Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;

XX DR WPI; 2001-611470/70.

XX PT Stabilized pharmaceutical containing N-terminal glutamic acid or glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt with strong acid.

XX PS Claim 9; Page 136; 149pp; French.

XX CC The present invention describes a pharmaceutical compound (I) that contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in the form of an addition salt with a strong, physiologically acceptable acid (II). Also described are: (a) a pharmaceutical composition containing at least one (I); (b) a vaccine containing at least one (I) where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a method for in vitro diagnosis of diseases associated with the presence of (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process for preparing (I). (I) has immunomodulator, endocrine, antiallergic, neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and cytostatic activities. (I) are useful, in human or veterinary medicine, in pharmaceutical compositions (for treating immune disorders, e.g. immune deficiency, autoimmune states, hypersensitivity, allergy, graft rejection, infection, hormonal disorders and central nervous system diseases), also, where (I) is a MHC ligand (Ia), in vaccines for treatment or prevention of: (i) viral, bacterial, parasitic or fungal infections; or (ii) of cancers. A particular application is in anti-melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases associated with interactions between MHC and (I), e.g. melanoma and human immunodeficiency virus infection. AAM9898 to AAM99592 represent peptides which can be used in pharmaceutical compounds from the present invention

XX SQ Sequence 19 AA;

Query Match 100.0%; Score 74; DB 4; Length 19;
Best Local Similarity 100.0%; Pred. No. 1.2e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 1 QYIKANSKFIGITEL 15
|||||

RESULT 80

ADH09986
ID ADH09986 standard; peptide; 20 AA.

XX AC ADH09986;

XX DT 11-MAR-2004 (first entry)

XX DE Modified tetanus toxoid T-helper epitope.

XX KW Maleimide cluster; multivalent peptide; multivalent protein; peptide synthesis; vaccination; peptide drug delivery; drug targeting; protein folding; cholic acid core; tetanus toxoid; T-helper epitope.

XX OS Synthetic.

XX OS Clostridium tetani.

XX PH Key Location/Qualifiers

XX FT Modified-site 20 /note= "C-terminal amide"

XX PN WO2004000802-A2.

XX PD 31-DEC-2003.

XX PF 20-JUN-2003; 2003WO-US019779.

XX PR 20-JUN-2002; 2002US-0390776P.

XX PA (UYMA-) UNIV MARYLAND BIOTECHNOLOGY INST.

XX PI Wang L, Ni J, Li H, Singh S;

XX DR WPI; 2004-156401/15.

XX PT Maleimide cluster comprising core molecule, carbohydrate core, cholic acid core, useful as template for assembling multivalent peptide.

XX PS Example 9; Fig 10; 63pp; English.

XX The invention relates to a maleimide cluster for multivalent peptide
 CC synthesis. The maleimide cluster can comprise a core to which five or
 CC more maleimides are each attached via a linker, or it can comprise a
 CC carbohydrate or cholic acid core to which two or more maleimides are
 CC each attached via a linker. The invention also relates to a multivalent
 CC peptide or protein comprising a maleimide cluster with identical or
 CC different peptides or proteins covalently attached to the maleimide;
 CC production of a multivalent peptide or protein; methods of vaccination,
 CC peptide drug delivery or drug targeting using the maleimide cluster; and
 CC methods of raising polyclonal or monoclonal antibodies using the
 CC maleimide cluster. The maleimide cluster is useful as a template for the
 CC assembly of multivalent peptides. These may be used in vaccination, for
 CC peptide drug delivery or for studying protein folding. A targeting
 CC protein may also be attached to maleimide clusters to facilitate the
 CC targeting of a compound to specific cells or organelles. The present
 CC sequence represents a peptide which was ligated to a cholic acid-based
 CC maleimide cluster in an example of the invention.

XX SQ Sequence 20 AA;

Query Match 100.0%; Score 74; DB 8; Length 20;
 Best Local Similarity 100.0%; Pred. No. 1.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20
 |||||

RESULT 81
 AAB46196
 ID AAB46196 standard; peptide; 22 AA.

XX AC AAB46196;
 XX 04-APR-2001 (first entry)
 XX Tetanus toxoid epitope fusion construct #16.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 8 QYIKANSKFIGITEL 22
 |||||

RESULT 82
 AAB46175
 ID AAB46175 standard; peptide; 22 AA.

XX AC AAB46175;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid 830-844 epitope AN90549.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 31; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 83
 AAB46178 standard; peptide; 22 AA.
 XX
 AC AAB46178;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid 830-844 epitope AN90576.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 EN WO200072880-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 31; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 22 AA;
 Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 84
 AAB46203 standard; peptide; 22 AA.
 XX
 AC AAB46203;
 XX

DT 04-APR-2001 (first entry)
 XX
 DE Human APP A-beta 1-12 peptide fragment #1.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Homo sapiens.
 XX
 EN WO200072880-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Claim 60; Page 119; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 22 AA;
 Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 85
 ADP02903 standard; peptide; 22 AA.
 ID ADP02903
 XX
 AC ADP02903;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #15 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 EN WO2004041067-A2.
 XX

CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX
 SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 8; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 88

AA92650
 ID AAY92650 standard; peptide; 25 AA.

AC AAY92650;

XX 10-AUG-2000 (first entry)

XX PSMpep007 - P2 inserted in hPSM insertion position 6.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

OS Synthetic.

OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page 117; 220pp; English.

XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 6 QYIKANSKFIGITEL 20

RESULT 89

AA92652
 ID AAY92652 standard; peptide; 25 AA.

AC AAY92652;

XX 10-AUG-2000 (first entry)

XX PSMpep009 - P2 inserted in hPSM insertion position 10.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

OS Synthetic.

OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page 117; 220pp; English.

XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20

RESULT 90
 AAY92651
 ID AAY92651 standard; peptide; 25 AA.

AC AAY92651;

XX 10-AUG-2000 (first entry)

DE PSMpep008 - P2 inserted in hPSM insertion position 8.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

XX Synthetic.

OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-010501IP.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

PS Example 1; Page 117; 220pp; English.

XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20

RESULT 91
 AAB49092
 ID AAB49092 standard; protein; 25 AA.

XX AAB49092;

XX 11-SEP-2003 (revised)

DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:28.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeldt-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

PS Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid

CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jacob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 25.AA;

Query Match 100.0%; Score 74; DB 4; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06; Indels 0; Gaps 0;
 Matches 15; Conservative 0; Mismatches 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 92

AAR62701
 ID AAR62701 standard; peptide; 27 AA.

AC AAR62701;

DT 25-MAR-2003 (revised)

DT 10-SEP-1995. (first entry)

XX LHRH-containing immunogenic peptide.

XX Helper T cell epitope; universal immune stimulator; invasin; hapten;
 KW vaccine; LHRH; luteinising hormone releasing hormone; prostate;
 KW androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

XX Synthetic.

XX Key Location/Qualifiers
 FH Domain 1..17
 FT Domain /note= "tetanus toxin helper T cell epitope"
 FT Domain 18..27
 FT Domain /note= "LHRH hapten"

XX W09425060-A1.

XX 10-NOV-1994.

XX 28-APR-1994; 94WO-US004832.

XX 27-APR-1993; 93US-00057166.

XX 14-APR-1994; 94US-00229275.

XX (LADD/) LADD A B.

XX (WANG/) WANG C Y.

XX (ZAMB/) ZAMB T.

XX Ladd AB, Wang CY, Zamb T;

DR WPI; 1994-357910/44.

XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.

XX Claim 8, 12; Page 84; 213pp; English.

XX Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasin protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence represents an LHRH-
 CC containing, invasin-free immunogenic peptide as above which can be used
 CC as a potent vaccine for treating e.g. prostatic hyperplasia, androgen-
 CC dependent carcinoma, prostatic carcinoma, testicular carcinoma, ovarian
 CC endometriosis, benign uterine tumours, recurrent functional ovarian
 CC cysts, (severe) premenstrual syndrome or oestrogen-dependent breast
 CC cancer, or for induction of infertility. This sequence is particularly
 CC preferred. (Updated on 25-MAR-2003 to correct PN field.)

XX SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 3 QYIKANSKFIGITEL 17

RESULT 93

AAR82596
 ID AAR82596 standard; peptide; 27 AA.

XX AAR82596;

DT 13-JUN-1996 (first entry)

XX IgE CH4 region contg. peptide immunogen for treating allergies.

XX IgE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
 KW vaccine; allergy; antibody; constant heavy chain.

XX Synthetic.

XX W09526365-A1.

XX 05-OCT-1995.

XX 24-MAR-1995; 95WO-US003741.

XX 28-MAR-1994; 94US-00218461.

XX 25-OCT-1994; 94US-00328912.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 1995-351297/45.

XX Synthetic peptide-based immunogen contg. IgE CH4 peptide and helper T
 PT cell epitope - useful for eliciting antibody prodn. for allergy
 PT treatment.

XX Claim 5; Page 62; 87pp; English.

XX AAR82592-R82600 and AAR83560-R83581 are peptide immunogens that are
 CC useful in vaccines for treating allergic reactions. In the immunogens, an
 CC Ige CH4 peptide is attached C-terminally to a series of amino acids
 CC including a helper T cell epitope. The immunogen may also opt. contain a
 CC fatty acid or fatty acid derivative, an invasin domain or alpha-NH2. The
 CC immunogen produces high titres of antibodies to the effector site in
 CC human Ige heavy chain (the CH4 domain peptide) which inhibit mast cell
 CC activation and reduce allergen-induced Ige prodn. The immunogens may be
 CC used in either a radially branching multimeric form or a linearly
 CC arranged monomeric form
 XX
 SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17

RESULT 94
 AAB49074
 ID AAB49074 standard; peptide; 27 AA.

XX AAB49074;
 AC
 XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 DT
 XX
 DE Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:10.
 XX
 KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.

XX WO2000072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 45; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which

CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis); systemic senile
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 4; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 95

AAB49077
 ID AAB49077 standard; peptide; 27 AA.

XX AAB49077;

XX 11-SEP-2003 (revised)

DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:13.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO2000072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 45; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for

XX preventing or treating a disease characterised by amyloid fibril deposits

XX (amyloid plaques) in a patient. The pharmaceutical composition comprises

XX an agent that will induce an immune response against an amyloid

XX component, or an antibody or antibody fragment that binds to an amyloid

XX component. The invention also relates to a method for determining the

XX prognosis of a patient undergoing treatment for an amyloid disorder which

XX involves measuring a patient serum amount of immunoreactivity against a

XX selected amyloid component. A patient serum immunoreactivity of at least

XX four times a base line serum immunoreactivity control level indicates a

XX prognosis of improved status with respect to the disorder. The

XX pharmaceutical compositions of the invention are useful for treating a

XX wide variety of disorders characterised by amyloid fibril deposition in a

XX patient. Such disorders include Alzheimer's disease characterised by AA

XX amyloid beta peptide fibril deposits; type 2 diabetes characterised by

XX islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic

XX amyloidosis associated with systemic inflammatory diseases (e.g.,

XX rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA

XX fibrils derived from serum amyloid A protein (ApoSAA); systemic senile

XX amyloidosis and familial amyloid cardiomyopathy characterised by ATTR

XX fibrils derived from transthyretin (TTR); transmissible spongiform

XX encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by

XX prion protein deposits; and beta-2-microglobulin deposits which form as a

XX result of long term haemodialysis treatment. The present sequence

XX represents an immunogenic fusion protein comprising an amyloid beta

XX peptide fused to a universal T-cell epitope which may be used in a

XX composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-

XX 2003 to standardise OS field)

SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 4; Length 27;
Best Local Similarity 100.0%; Pred. No. 1.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 8 QYIKANSKFIGITEL 22

RESULT 96

ADD89947

ID ADD89947 standard; protein; 27 AA.

XX ADD89947;

AC ADD89947;

XX 29-JAN-2004 (first entry)

XX LHRH peptide used in immunostimulant complex for prostate cancer vaccine.

XX Immunostimulant; vaccine; human; immunogen; LHRH; immunotherapy;

XX prostate cancer.

XX Synthetic.

XX Homo sapiens.

XX WO2003068169-A2.

XX 21-AUG-2003.

XX 14-FEB-2003; 2003WO-US004711.

XX 14-FEB-2002; 2002US-00076674.

XX 31-JAN-2003; 2003US-00076674.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Sokoll KK;

XX WPI; 2003-778890/73.

XX Stabilized immunostimulating complex, useful for vaccination, e.g.
PT against human immune deficiency viruses, comprises cationic peptide
PT immunogen and anionic oligonucleotide.

XX Claim 17; SEQ ID NO 7; 159pp; English.

XX The present sequence is that of a synthetic immunogenic peptide derived
CC from human LHRH. This is an example of peptides that can be used in
CC claimed immunostimulatory complexes of the invention that are
CC specifically adapted to act as adjuvant and as peptide immunogen
CC stabiliser. The complexes comprise a CpG oligonucleotide and a
CC biologically active peptide immunogen. The complex is particulate and can
CC efficiently present peptide immunogens to the cells of the immune system
CC to produce an immune response. The complexes may be prepared with various
CC ratios of peptides to CpG oligonucleotides to provide different physical
CC properties, such as the size of the microparticle. An immunostimulatory
CC complex comprising the present LHRH derived peptide can be used in a
CC vaccine for prostate cancer.

XX Sequence 27 AA;

Query Match 100.0%; Score 74; DB 7; Length 27;
Best Local Similarity 100.0%; Pred. No. 1.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 3 QYIKANSKFIGITEL 17

RESULT 97

ADJ56906

ID ADJ56906 standard; peptide; 27 AA.

XX ADJ56906;

XX 06-MAY-2004 (first entry)

XX Human LHRH immunogenic peptide #1.

XX Immunostimulatory complex; adjuvant; peptide immunogen stabiliser;

XX water-in-oil emulsion; suspension; vaccine; prostate cancer;

XX hormone ablation; allergy; HIV infection; foot-and-mouth disease;

XX therapy; human; antigen; LHRH.

XX Homo sapiens.

XX US2004009897-A1.

XX 15-JAN-2004.

XX 21-MAY-2003; 2003US-00355161.

XX 14-FEB-2002; 2002US-00076674.

XX (SOKO/) SOKOLL K K.

XX Sokoll KK;

XX WPI; 2004-212745/20.

XX Stabilized immunostimulatory complex useful for treating allergy, HIV

XX infection or prostate cancer, comprising cationic peptide immunogen and

XX anionic CpG oligonucleotide.

XX Claim 17; SEQ ID NO 7; 63pp; English.

XX The invention relates to an immunostimulatory complex specifically

XX adapted to act as adjuvant and as a peptide immunogen stabiliser. The

XX invention is useful for preparing a water-in-oil emulsion, suspension and

XX vaccine. It is also useful for treating prostate cancer, hormone

XX ablation, allergy, HIV infection, foot-and-mouth disease, etc. The

CC present sequence is human LHRH immunogenic peptide used in the invention.

XX
SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 8; Length 27;
Best Local Similarity 100.0%; Pred. No. 1.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | | | |
Db 3 QYIKANSKFIGITEL 17

RESULT 98

AAU11422
ID AAU11422 standard; peptide; 28 AA.

AC AAU11422;

XX 12-MAR-2002 (first entry)

XX Synthetic immunogen peptide 3.

XX Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
KW luteinising hormone releasing hormone; LHRH; contraceptive;
KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX Clostridium tetani.

OS Mammalia.

OS Synthetic.

OS Chimeric.

XX Key Location/Qualifiers

FT Peptide 1..15 /note= "tetrax toxoid sequence (830-844 aa)"

FT Peptide 16..19 /note= "Spacer peptide"

FT Peptide 20..28

FT Modified-site 28 /note= "Gonadotrophin releasing hormone epitope"

FT /note= "Amidated glycine or glycineamide"

XX WO2001085763-A2.

XX 15-NOV-2001.

XX 04-MAY-2001; 2001WO-US014363.

XX 05-MAY-2000; 2000US-0202328P.

XX (APHT-) APHTON CORP.

XX Grimes S, Michaeli D, Stevens VC;

XX WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
PT gonadotrophin releasing hormone, comprises fusion peptide having
PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
PT or its analog.

XX Claim 11; Page 8; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
CC antibodies against gonadotrophin releasing hormone (GnRH) also known as
CC luteinising hormone releasing hormone (LHRH) comprising a fusion peptide
CC which comprises a promiscuous helper T-cell peptide epitope and
CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
CC useful inducing an immune response against GnRH in an animal subject, and
CC as such is useful as a contraceptive and in the treatment of diseases
CC such as cancer (of the breast, uterus and other gynaecological cancer),

CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
CC prostate cancer. The immunogen is effective in eliciting high and
CC specific anti-GnRH antibody titres. The present sequence is a synthetic
CC immunogen of the invention

XX Sequence 28 AA;

Query Match 100.0%; Score 74; DB 5; Length 28;
Best Local Similarity 100.0%; Pred. No. 1.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15

RESULT 99

AAR83561

ID AAR83561 standard; peptide; 29 AA.

XX AAR83561;

XX 13-JUN-1996 (first entry)

XX IgE CH4 region contg. peptide immunogen for treating allergies.

XX IgE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
KW vaccine; allergy; antibody; constant heavy chain.

XX Synthetic.

XX WO9526365-A1.

XX 05-OCT-1995.

XX 24-MAR-1995; 95WO-US003741.

XX 28-MAR-1994; 94US-00218461.

XX 25-OCT-1994; 94US-00328912.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 1995-351297/45.

XX Synthetic peptide-based immunogen contg. IgE CH4 peptide and helper T
PT cell epitope - useful for eliciting antibody prodn. for allergy
PT treatment.

XX Claim 5; Page 68-69; 87pp; English.

XX AAR82592-R82600 and AAR83560-R83581 are peptide immunogens that are
CC useful in vaccines for treating allergic reactions. In the immunogens, an
CC IgE CH4 peptide is attached C-terminally to a series of amino acids
CC including a helper T cell epitope. The immunogen may also opt. contain a
CC fatty acid or fatty acid derivative, an invasin domain or alpha-NH2. The
CC immunogen produces high titres of antibodies to the effector site in
CC human IgE heavy chain (the CH4 domain peptide) which inhibit mast cell
CC activation and reduce allergen-induced IgE prodn. The immunogens may be
CC used in either a radially branching multimeric form or a linearly
CC arranged monomeric form

XX Sequence 29 AA;

Query Match 100.0%; Score 74; DB 2; Length 29;
Best Local Similarity 100.0%; Pred. No. 1.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

Db 3 QYIKANSKFIGITEL 17

RESULT 100
 AAR44398
 ID AAR44398 standard; peptide; 30 AA.
 XX
 AC AAR44398;
 XX
 DT 08-NOV-1994 (first entry)
 XX
 DE HIV antigen fragment.
 XX
 KW HIV; human immunodeficiency virus; immunisation; monoclonal antibody.
 XX
 OS Human immunodeficiency virus.
 XX
 PN TW208717-A.
 XX
 PD 01-JUL-1993.
 XX
 PF 24-APR-1992; 92TW-00103240.
 XX
 PR 24-APR-1992; 92TW-00103240.
 XX
 PA (CHIN/) CHIN L.
 XX
 PI Chin L;
 XX
 DR WPI; 1993-335491/42.
 XX
 PT Induction of neutralising human monoclonal antibodies against human
 PT immuno-deficiencies - by sepg. peripheral mononuclear cells from blood
 PT using density gradient centrifugation, and treating cells by L-leucyl-L-
 PT leucine methyl ester etc.
 XX
 PS Claim 1; Page; 36pp; Chinese.
 XX
 CC The invention relates to a method of assessing human immunodeficiency
 CC virus and producing human immunodeficiency antibodies by in-vitro
 CC immunisation, which comprises: (a) separating peripheral mononuclear
 CC cells from blood using density gradient centrifugation; (b) treating the
 CC mononuclear cells with L-leucyl-L-leucine methyl ester; and (c) using
 CC the present antigen fragment, which is formed by coupled T and B cells,
 CC in a culture medium of human serum, IL-2 and T cells to effect
 CC cultivation and achieve in vitro immunisation
 XX
 SQ Sequence 30 AA;
 Query Match 100.0%; Score 74; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 101
 AAY82632
 ID AAY82632 standard; peptide; 31 AA.
 XX
 AC AAY82632;
 XX
 DT 07-AUG-2000 (first entry)
 XX
 DE Tetanus toxoid T cell epitope and Der pII B cell epitope peptide.
 XX
 KW T cell epitope; B cell epitope; allergy; allergen; antigenic;
 KW antiallergic; antiaethmatic; antiinflammatory; dermatological;
 KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
 KW atopic dermatitis; acute urticaria; chronic urticaria;
 KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
 KW anaphylactic reaction; drug hypersensitivity; allergic reaction.
 XX

OS Dermatophagoides pteronyssinus.
 OS Clostridium tetani.
 XX Synthetic.
 PN WO200006694-A2.
 XX
 PD 10-FEB-2000.
 XX
 PF 20-JUL-1999; 99WO-BE000092.
 XX
 PR 30-JUL-1998; 98EP-00870167.
 XX
 PA (UNIO) UCB SA.
 XX
 PI Saint-Remy J, Jacquemin M;
 XX
 DR WPI; 2000-422470/36.
 XX
 PT New compound for prevention and treatment of allergies comprises at least
 PT one allergen antigenic determinant recognized by a B cell and at least
 PT one antigenic determinant which does not trigger T cell activation.
 XX
 PS Claim 8; Page 35; 50pp; English.
 XX
 CC The present invention describes a compound (I) for the prevention and/or
 CC treatment of allergy. The compound comprises at least one allergen
 CC antigenic determinant (i) recognised by a B cell or an antibody secreted
 CC by a B cell of a non-atopic individual and at least one antigenic
 CC determinant (ii) different from the allergen that triggers T cell
 CC activation. (I) has antiallergic, antiasthmatic, antiinflammatory,
 CC dermatological and immunosuppressive activities, and can be used in a
 CC vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
 CC treat and/or prevent allergies or a disease of allergic origin,
 CC especially hypersensitivities. These include rhinitis, sinusitis,
 CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
 CC urticaria, gastro-intestinal syndromes associated with the ingestion of
 CC food allergens, oro-pharyngeal syndrome, anaphylactic reactions
 CC associated with drug hypersensitivities and/or a mixture of these. The
 CC use of (I) in the treatment of allergic conditions avoids the need for
 CC drug treatment, which often causes undesirable side-effects. Also, prior
 CC art drug therapies alleviate symptoms, but do not influence their causes,
 CC however (I) actually combats the cause of an allergic reaction. The
 CC present sequence represents a specifically claimed compound peptide
 CC sequence from the present invention
 XX
 SQ Sequence 31 AA;
 Query Match 100.0%; Score 74; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 2.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 102
 AAU11426
 ID AAU11426 standard; peptide; 31 AA.
 XX
 AC AAU11426;
 XX
 DT 12-MAR-2002 (first entry)
 XX
 DE Synthetic immunogen peptide 7.
 XX
 KW Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.
 XX
 OS Clostridium tetani.

OS Mammalia.
OS Synthetic.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 1. .10
FT FT /note= "Gonadotrophin releasing hormone epitope"
FT Misc-difference 1
FT /label= OTHER
FT /note= "Other= Pyro-glutamic acid or 5-oxo proline"
FT Peptide 11. .16
FT FT /note= "Spacer peptide"
FT Peptide 17. .31
FT FT /note= "Tetanus toxoid sequence (830-844 aa)"
XX
FN WO200185763-A2.
XX
XX 15-NOV-2001.
XX
XX 04-MAY-2001; 2001WO-US014363.
XX
XX 05-MAY-2000; 2000US-0202328P.
XX
XX (APHT-) APHTON CORP.
XX
XX Grimes S, Michaeli D, Stevens VC;
XX
XX WPI; 2002-049440/06.
XX
XX Novel synthetic immunogen for inducing immune response against
PT gonadotropin releasing hormone, comprises fusion peptide having
PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
PT or its analog.
XX
XX Claim 11; Page 10; 43pp; English.
XX
XX The invention relates to a synthetic immunogen for inducing specific
CC antibodies against gonadotropin releasing hormone (GnRH) also known as
CC luteinising hormone releasing hormone, LH(RH) comprising a fusion peptide
CC which comprises a promiscuous helper T-cell peptide epitope and
CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
CC useful inducing an immune response against GnRH in an animal subject, and
CC as such is useful as a contraceptive and in the treatment of diseases
CC such as cancer (of the breast, uterus and other gynaecological cancer),
CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
CC prostate cancer. The immunogen is effective in eliciting high and
CC specific anti-GnRH antibody titres. The present sequence is a synthetic
CC immunogen of the invention
XX
XX Sequence 31 AA;
SQ
Query Match 100.0%; Score 74; DB 5; Length 31;
Best Local Similarity 100.0%; Pred. No. 2.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB 17 QYIKANSKFIGITEL 31
RESULT 103
AAV82636
ID AAY82636 standard; peptide; 32 AA.
XX
XX AAY82636;
AC
XX
XX 07-AUG-2000 (first entry)
DT
XX
XX Tetanus toxoid T cell epitope and Der pII B cell epitope peptide.
DE
XX
XX T cell epitope; B cell epitope; allergy; allergen; antigenic;
KW antiallergic; antiasthmatic; antiinflammatory; dermatological;
KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
XX

KW atopic dermatitis; acute urticaria; chronic urticaria;
KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
KW anaphylactic reaction; drug hypersensitivity; allergic reaction.
XX
OS Dermatophagoides pteronyssinus.
OS Clostridium tetani.
OS Synthetic.
XX
FN WO200006694-A2.
XX
XX 10-FEB-2000.
XX
XX 20-JUL-1999; 99WO-BE000092.
XX
XX 30-JUL-1998; 98EP-00870167.
XX
XX (UNIO) UCB SA.
XX
XX Saint-Remy J, Jacquemin M;
XX
XX WPI; 2000-422470/36.
XX
XX New compound for prevention and treatment of allergies comprises at least
PT one allergen antigenic determinant recognized by a B cell and at least
PT one antigenic determinant which does not trigger T cell activation.
XX
XX Claim 8; Page 35; 50pp; English.
XX
XX The present invention describes a compound (I) for the prevention and/or
CC treatment of allergy. The compound comprises at least one allergen
CC antigenic determinant (i) recognised by a B cell or an antibody secreted
CC by a B cell of a non-atopic individual and at least one antigenic
CC determinant (ii) different from the allergen that triggers T cell
CC activation. (I) has antiallergic, antiasthmatic, antiinflammatory,
CC dermatological and immunosuppressive activities, and can be used in a
CC vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
CC treat and/or prevent allergies or a disease of allergic origin,
CC especially hypersensitivities. These include rhinitis, sinusitis,
CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
CC urticaria, gastro-intestinal syndromes associated with the ingestion of
CC food allergens, oro-pharyngeal syndrome, anaphylactic reactions
CC associated with drug hypersensitivities and/or a mixture of these. The
CC use of (I) in the treatment of allergic conditions avoids the need for
CC drug treatment, which often causes undesirable side-effects. Also, prior
CC art drug therapies alleviate symptoms, but do not influence their causes,
CC however (I) actually combats the cause of an allergic reaction. The
CC present sequence represents a specifically claimed compound peptide
CC sequence from the present invention
XX
XX Sequence 32 AA;
SQ
Query Match 100.0%; Score 74; DB 3; Length 32;
Best Local Similarity 100.0%; Pred. No. 2.2e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15
RESULT 104
ADP02886
ID ADP02886 standard; peptide; 36 AA.
XX
XX ADP02886;
AC
XX
XX 12-AUG-2004 (first entry)
DT
XX
XX Tetanus toxoid amino acids 830-844 and 947-967for fusion protein.
DE
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX

XX OS Clostridium tetani.
 XX PN WO2004041067-A2.
 XX XX
 XX PD 21-MAY-2004.
 XX XX
 XX PF 31-OCT-2003; 2003WO-US034527.
 XX XX
 XX PR 01-NOV-2002; 2002US-0423012P.
 XX XX
 XX PA (ELAN-) ELAN PHARM INC.
 XX PA (REGC) UNIV CALIFORNIA.
 XX XX
 XX PI Schenk DB, Masliah E;
 XX XX
 XX DR WPI; 2004-411388/38.
 XX XX
 XX PT Preventing or treating disease such as Parkinson's disease characterized
 XX PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 XX PT agent that induces immunogenic response against alpha-synuclein and/or
 XX PT beta-amyloid.
 XX XX
 XX PS Disclosure; SEQ ID NO 19; 78pp; English.
 XX XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a linear fusion of
 CC the tetanus toxoid peptide corresponding to amino acid 830-844 and 947-
 CC 967 used in the method of the invention.
 XX XX
 SQ Sequence 36 AA;
 Query Match 100.0%; Score 74; DB 8; Length 36;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 1 QYIKANSKFIGITEL 15
 RESULT 105
 AAR65389
 ID AAR65389 standard; peptide; 37 AA.
 XX XX
 AC AAR65389;
 XX XX
 DT 25-MAR-2003 (revised)
 DT 21-SEP-1995 (first entry)
 XX XX
 DE Universal immunostimulator having GG spacers.
 XX XX
 KW Helper T cell epitope; universal immune stimulator; invasin; haptent;
 KW tetanus toxin.
 XX XX
 OS Synthetic.
 XX XX
 XX Key Location/Qualifiers
 XX FT 3..19
 XX FT /note= "tetanus toxin helper T cell epitope"
 XX FT 22..37
 XX FT /note= "invasin domain"

PN WO9425060-A1.
 XX XX
 PD 10-NOV-1994.
 XX XX
 PF 28-APR-1994; 94WO-US004832.
 XX XX
 PR 27-APR-1993; 93US-00057166.
 PR 14-APR-1994; 94US-00229275.
 XX XX
 PA (LADD/) LADD A E.
 PA (WANG/) WANG C Y.
 PA (ZAMB/) ZAMB T.
 XX XX
 PI Ladd AE, Wang CY, Zamb T;
 XX XX
 XX WPI; 1994-357910/44.
 DR XX
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 XX PT suppress LHRH activity in males and females.
 XX PT
 XX PS Disclosure; Page 95; 213pp; English.
 XX XX
 CC Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein haptent containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasin protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and haptent components. When the
 CC haptent is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence is an example of a
 CC -GG-Th-GG-invasin immune stimulator to which a haptent can be bonded.
 CC (Updated on 25-MAR-2003 to correct PN field.)
 XX XX
 SQ Sequence 37 AA;
 Query Match 100.0%; Score 74; DB 2; Length 37;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 5 QYIKANSKFIGITEL 19
 RESULT 106
 AAR65383
 ID AAR65383 standard; peptide; 37 AA.
 XX XX
 AC AAR65383;
 XX XX
 DT 25-MAR-2003 (revised)
 DT 21-SEP-1995 (first entry)
 XX XX
 DE Universal immunostimulator having GG spacers.
 XX XX
 KW Helper T cell epitope; universal immune stimulator; invasin; haptent;
 KW tetanus toxin.
 XX XX
 OS Synthetic.
 XX XX
 XX Key Location/Qualifiers
 XX FT 1..16
 XX FT /note= "invasin domain"
 XX FT 19..35
 XX FT /note= "tetanus toxin helper T cell epitope"
 XX PN WO9425060-A1.
 XX XX
 XX PD 10-NOV-1994.

XX PF 28-APR-1994; 94WO-US004832.
 XX PR 27-APR-1993; 93US-00057166.
 XX PR 14-APR-1994; 94US-00229275.
 XX (LADD/) LADD A E.
 XX PA (WANG/) WANG C Y.
 XX PA (ZAMB/) ZAMB T.
 XX Ladd AE, Wang CY, Zamb T;
 XX WPI; 1994-357910/44.
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 XX suppress LHRH activity in males and females.
 XX Disclosure; Page 95; 213pp; English.
 XX Synthetic immunogenic peptides are provided in which a universal immune
 XX stimulator is linked to a peptide or protein hapten containing B cell
 XX and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 XX potent immune responses to the coupled peptide or protein. The stimulator
 XX consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 XX immune response to the coupled peptide in members of a heterogeneous
 XX population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 XX sequence from the invasive protein of Yersinia. Spacer amino acid
 XX sequences (e.g. Gly-Gly) can be provided between the invasive and Th
 XX domains and between the immune stimulator and hapten components. When the
 XX hapten is LHRH, then optionally the invasive domain can be omitted from
 XX the immune stimulator component. The present sequence is an example of an
 XX invasive-GG-Th-GG- immune stimulator to which a hapten can be bonded.
 XX (Updated on 25-MAR-2003 to correct PN field.)
 XX SQ Sequence 37 AA;
 Query Match 100.0%; Score 74; DB 2; Length 37;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 21 QYIKANSKFIGITEL 35
 RESULT 107
 AAB49076
 ID AAB49076 standard; peptide; 43 AA.
 XX AAB49076;
 XX 11-SEP-2003 (revised)
 XX 27-MAR-2001 (first entry)
 XX Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:12.
 XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 XX antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 XX reactive system amyloidosis; systemic senile amyloidosis;
 XX familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 XX Creutzfeld-Jakob disease; Kuru;
 XX haemodialysis-associated beta-2-microglobulin deposition;
 XX amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX Homo sapiens.
 XX Clostridium tetani.
 XX Chimeric.
 XX WO200072876-A2.
 XX 07-DEC-2000.
 XX 01-JUN-2000; 2000WO-US015239.

XX PR 01-JUN-1999; 99US-0137010P.
 XX (NEUR-) NEURALAB LTD.
 XX Schenk DB;
 XX WPI; 2001-070921/08.
 XX Pharmaceutical composition comprising immunogen against amyloid component
 XX such as fibril peptide or protein, or antibody against amyloid component
 XX useful for treating amyloid diseases or amyloidoses.
 XX Disclosure; Page 45; 140pp; English.
 XX The invention relates to a novel pharmaceutical composition for
 XX preventing or treating a disease characterised by amyloid fibril deposits
 XX (amyloid plaques) in a patient. The pharmaceutical composition comprises
 XX an agent that will induce an immune response against an amyloid
 XX component, or an antibody or antibody fragment that binds to an amyloid
 XX component. The invention also relates to a method for determining the
 XX prognosis of a patient undergoing treatment for an amyloid disorder which
 XX involves measuring a patient serum amount of immunoreactivity against a
 XX selected amyloid component. A patient serum immunoreactivity of at least
 XX four times a base line serum immunoreactivity control level indicates a
 XX prognosis of improved status with respect to the disorder. The
 XX pharmaceutical compositions of the invention are useful for treating a
 XX wide variety of disorders characterised by amyloid fibril deposition in a
 XX patient. Such disorders include Alzheimer's disease characterised by
 XX amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 XX islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 XX amyloidosis associated with systemic inflammatory diseases (e.g.,
 XX rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 XX fibrils derived from serum amyloid A protein (ApoSSA); systemic senile
 XX amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 XX fibrils derived from transthyretin (TTR); transmissible spongiform
 XX encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 XX prion protein deposits; and beta-2-microglobulin deposits which form as a
 XX result of long term haemodialysis treatment. The present sequence
 XX represents an immunogenic fusion protein comprising an amyloid beta
 XX peptide fused to a universal T-cell epitope which may be used in a
 XX composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 XX 2003 to standardise OS field)
 XX SQ Sequence 43 AA;
 Query Match 100.0%; Score 74; DB 4; Length 43;
 Best Local Similarity 100.0%; Pred. No. 3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 8 QYIKANSKFIGITEL 22
 RESULT 108
 AAB46177
 ID AAB46177 standard; peptide; 43 AA.
 XX AAB46177;
 XX 04-APR-2001 (first entry)
 XX Tetanus toxoid 830-844 + 947-967 epitope AN90542.
 XX Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 XX Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 XX amyloid precursor protein; Alzheimer's disease.
 XX Clostridium tetani.
 XX WO200072880-A2.

PD 07-DEC-2000.
XX
PF 26-MAY-2000; 2000WO-US014810.
XX
PR 28-MAY-1999; 99US-00322289.
XX
PA (NEUR-) NEURALAB LTD.
XX
PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
XX
DR WPI; 2001-032104/04.
XX
XX Preventing or treating a disease associated with amyloid deposits,
PT especially Alzheimer's disease, comprises administering amyloid specific
PT antibody.
XX
XX Disclosure; Page 31; 143pp; English.
XX
CC This invention describes a novel method of preventing or treating a
CC disease associated with amyloid deposits of amyloid precursor protein
CC (APP) Abeta fragments in the brain of a patient, which comprises
CC administering to the patient: (a) an antibody that binds to Abeta, the
CC antibody binds to an amyloid deposit and induces a clearing response (Fc
CC receptor mediated phagocytosis) against it (b) a polypeptide containing
CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
CC that induces an immunogenic response against residues 1-3 to 7-11 of
CC Abeta. The products of the invention have nootropic and neuroprotective
CC activity. The method is also useful for monitoring a course of treatment
CC being administered to a patient e.g. active and passive immunization. The
CC methods are useful for prophylactic and therapeutic treatment of
CC Alzheimer's disease
XX
SQ Sequence 43 AA;
Query Match 100.0%; Score 74; DB 4; Length 43;
Best Local Similarity 100.0%; Pred. No. 3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB |||||
8 QYIKANSKFIGITEL 22
RESULT 109
ADP02902
ID ADP02902 standard; peptide; 43 AA.
XX
AC ADP02902;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #14 for treating neurodegenerative disorder.
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
XX aggregation; brain; immunogenic response; beta-amyloid;
XX Parkinson's disease.
XX
XX Synthetic.
XX
XX WO2004041067-A2.
XX
XX 21-MAY-2004.
XX
XX 31-OCT-2003; 2003WO-US034527.
XX
XX 01-NOV-2002; 2002US-0423012P.
XX
XX (ELAN-) ELAN PHARM INC.
XX (REGC) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
XX
XX WPI; 2004-411388/38.
XX

XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 35; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 43 AA;
Query Match 100.0%; Score 74; DB 8; Length 43;
Best Local Similarity 100.0%; Pred. No. 3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB |||||
8 QYIKANSKFIGITEL 22
RESULT 110
AAB49090
ID AAB49090 standard; protein; 44 AA.
XX
AC AAB49090;
XX
XX 11-SEP-2003 (revised)
XX
XX 27-MAR-2001 (first entry)
XX
XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:26.
XX
XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
XX antibody; vaccine; Alzheimer's disease; type 2 diabetes;
XX reactive system amyloidosis; systemic senile amyloidosis;
XX familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
XX Creutzfeld-Jakob disease; Kuru;
XX haemodialysis-associated beta-2-microglobulin deposition;
XX amyloid beta peptide; universal T-cell epitope; neuroprotective.
XX
XX Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX
XX WO200072876-A2.
XX
XX 07-DEC-2000.
XX
XX 01-JUN-2000; 2000WO-US015239.
XX
XX 01-JUN-1999; 99US-0137010P.
XX
XX (NEUR-) NEURALAB LTD.
XX
XX Schenk DB;
XX
XX WPI; 2001-070921/08.
XX
XX Pharmaceutical composition comprising immunogen against amyloid component
PT such as fibril peptide or protein, or antibody against amyloid component
PT useful for treating amyloid diseases or amyloidoses.
XX

XX PS Disclosure; Page 46; 140pp; English.

XX CC The invention relates to a novel pharmaceutical composition for

XX CC preventing or treating a disease characterised by amyloid fibril deposits

XX CC (amyloid plaques) in a patient. The pharmaceutical composition comprises

XX CC an agent that will induce an immune response against an amyloid

XX CC component, or an antibody or antibody fragment that binds to an amyloid

XX CC component. The invention also relates to a method for determining the

XX CC prognosis of a patient undergoing treatment for an amyloid disorder which

XX CC involves measuring a patient serum amount of immunoreactivity against a

XX CC selected amyloid component. A patient serum immunoreactivity of at least

XX CC four times a base line serum immunoreactivity control level indicates a

XX CC prognosis of improved status with respect to the disorder. The

XX CC pharmaceutical compositions of the invention are useful for treating a

XX CC wide variety of disorders characterised by amyloid fibril deposition in a

XX CC patient. Such disorders include Alzheimer's disease characterised by

XX CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by

XX CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic

XX CC amyloidosis associated with systemic inflammatory diseases (e.g.,

XX CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA

XX CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile

XX CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR

XX CC fibrils derived from transthyretin (TTR); transmissible spongiform

XX CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by

XX CC prion protein deposits; and beta-2-microglobulin deposits which form as a

XX CC result of long term haemodialysis treatment. The present sequence

XX CC represents an immunogenic fusion protein comprising an amyloid beta

XX CC peptide fused to a universal T-cell epitope which may be used in a

XX CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-

XX CC 2003 to standardise OS field)

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 3.1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 8 QYIKANSKFIGITEL 22

|||||

RESULT 111

AAB46194

ID AAB46194 standard; peptide; 44 AA.

XX AC AAB46194;

XX DT 04-APR-2001 (first entry)

XX DE Tetanus toxoid epitope fusion construct #14.

XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;

XX KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;

XX KW amyloid precursor protein; Alzheimer's disease.

XX OS Clostridium tetani.

XX PN WO200072880-A2.

XX PD 07-DEC-2000.

XX PF 26-MAY-2000; 2000WO-US014810.

XX PR 28-MAY-1999; 99US-00322289.

XX PA (NEUR-) NEURALAB LTD.

XX PI Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX DR WPI; 2001-032104/04.

PT Preventing or treating a disease associated with amyloid deposits,

PT especially Alzheimer's disease, comprises administering amyloid specific

PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX CC This invention describes a novel method of preventing or treating a

XX CC disease associated with amyloid deposits of amyloid precursor protein

XX CC (APP) Abeta fragments in the brain of a patient, which comprises

XX CC administering to the patient: (a) an antibody that binds to Abeta, the

XX CC antibody binds to an amyloid deposit and induces a clearing response (Fc

XX CC receptor mediated phagocytosis) against it (b) a polypeptide containing

XX CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

XX CC that induces an immunogenic response against residues 1-3 to 7-11 of

XX CC Abeta. The products of the invention have neurotropic and neuroprotective

XX CC activity. The method is also useful for monitoring a course of treatment

XX CC being administered to a patient e.g. active and passive immunization. The

XX CC methods are useful for prophylactic and therapeutic treatment of

XX CC Alzheimer's disease

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 3.1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 8 QYIKANSKFIGITEL 22

|||||

RESULT 112

ADP02917

ID ADP02917 standard; peptide; 44 AA.

XX AC ADP02917;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #29 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

XX KW aggregation; brain; immunogenic response; beta-amyloid;

XX KW Parkinson's disease.

XX OS Synthetic.

XX PN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX DE Preventing or treating disease such as Parkinson's disease characterized

XX DE by Lewy bodies or alpha-synuclein aggregation in brain by administering

XX DE agent that induces immunogenic response against alpha-synuclein and/or

XX DE beta-amyloid.

XX PS Disclosure; SEQ ID NO 50; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a

XX CC disease characterized by Lewy bodies or alpha-synuclein aggregation in

XX CC the brain, by administering an agent that induces an immunogenic response

XX CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is

CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 8; Length 44;

Best Local Similarity 100.0%; Pred. No. 3.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYKANSKFIGITEL 15

Db 8 QYKANSKFIGITEL 22

RESULT 113

AAU11430
 ID AAU11430 standard; peptide; 46 AA.

XX AC AAU11430;

XX DT 12-MAR-2002 (first entry)

XX DE Synthetic immunogen peptide 11.

XX Gonadotropin releasing hormone; GnRH; synthetic immunogen;
 XX luteinising hormone releasing hormone; LHRH; contraceptive;
 XX promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 XX breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 XX uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX Clostridium tetani.

XX Mammalia.

XX Synthetic.

XX Chimeric.

XX FH Key Location/Qualifiers

FT Peptide 1. .10
 FT /note= "Gonadotropin releasing hormone epitope (1. .10
 FT aa)"

FT Misc-difference 1

FT /label= OTHER

FT /note= "Other= Pyro-glutamic acid or 5-oxo proline"

FT Peptide 11. .16

FT /note= "Spacer peptide"

FT Peptide 17. .31

FT /note= "Tetanus toxoid (830-844 aa)"

FT Peptide 32. .37

FT /note= "Spacer peptide"

FT Peptide 38. .46

FT /note= "Gonadotropin releasing hormone epitope (2-10
 FT aa)"

FT Modified-site 46

FT /note= "Amidated glycine or glycine amide"

XX WO200185763-A2.

XX 15-NOV-2001.

XX 04-MAY-2001; 2001WO-US014363.

XX 05-MAY-2000; 2000US-0202328P.

XX (APHT-) APHTON CORP.

XX Grimes S, Michaeli D, Stevens VC;

XX

DR WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
 XX gonadotropin releasing hormone, comprises fusion peptide having
 XX promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 XX or its analog.

PS Claim 11; Page 12; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and
 CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is a synthetic
 CC immunogen of the invention

XX SQ Sequence 46 AA;

Query Match 100.0%; Score 74; DB 5; Length 46;

Best Local Similarity 100.0%; Pred. No. 3.2e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYKANSKFIGITEL 15

Db 17 QYKANSKFIGITEL 31

RESULT 114

AAU62723
 ID AAR62723 standard; peptide; 47 AA.

XX AC AAR62723;

XX DT 25-MAR-2003 (revised)

XX DT 17-SEP-1995 (first entry)

XX DE LHRH-containing immunogenic peptide.

XX Helper T cell epitope; universal immune stimulator; invasin; haptan;
 XX vaccine; LHRH; luteinising hormone releasing hormone; prostate;
 XX androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

XX OS Synthetic.

XX FH Key Location/Qualifiers

FT Domain 1. .16

FT /note= "invasin domain"

FT Domain 19. .35

FT /note= "tetanus toxin helper T cell epitope"

FT Domain 38. .47

FT /note= "LHRH haptan"

XX WO9425060-A1.

XX 10-NOV-1994.

XX 28-APR-1994; 94WO-US004832.

XX 27-APR-1993; 93US-00057166.

XX 14-APR-1994; 94US-00229275.

XX (LADD/) LADD A E.

XX (WANG/) WANG C Y.

XX (ZAMB/) ZAMB T.

XX Ladd AE, Wang CY, Zamb T;

XX

DR WPI; 1994-357910/44.
 XX
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.
 XX
 XX
 XX Claim 8; Page 88; 213pp; English.
 XX
 XX Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasive protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasive and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasive domain can be omitted from
 CC the immune stimulator component. The present sequence represents an LHRH-
 CC containing immunogenic peptide as above which can be used as a potent
 CC vaccine for treating e.g. prostatic hyperplasia, androgen-dependent
 CC carcinoma, prostatic carcinoma, testicular carcinoma, endometriosis,
 CC benign uterine tumours, recurrent functional ovarian cysts, (severe)
 CC premenstrual syndrome or oestrogen-dependent breast cancer, or for
 CC induction of infertility. (Updated on 25-MAR-2003 to correct PN field.)
 XX
 XX Sequence 47 AA;
 SQ

Query Match 100.0%; Score 74; DB 2; Length 47;
 Best Local Similarity 100.0%; Pred. No. 3.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 Db 21 QYIKANSKFIGITEL 35

RESULT 115
 AAW06131
 ID AAW06131 standard; peptide; 50 AA.
 AC
 AC AAW06131;
 XX
 XX
 XX 07-FEB-1997 (first entry)
 DT
 DT
 DE Anti-cholesteryl ester transfer multivalent vaccine peptide.
 XX
 XX Cholesteryl ester transfer protein; CETP; antigen; vaccine;
 KW cardiovascular disease; atherosclerosis.
 KW
 XX Synthetic.
 OS
 XX

Key Location/Qualifiers
 FT Misc-difference 1
 FT /note= "C-terminal Cys residue is present for use in
 FT linking the peptide to itself or other molecules"
 FT 2. .15
 FT /label= T-cell epitope
 FT /note= "T-cell epitope comprises amino acids 830-843 of
 FT tetanus toxoid protein"
 FT 16. .34
 FT /label= B-cell epitope
 FT /note= "B-cell epitope comprises amino acids 349-367 of
 FT human CETP"
 FT 35. .50
 FT /label= B-cell epitope
 FT /note= "B-cell epitope comprises the C-terminal 16 amino
 FT acids of human CETP, involved in neutral lipid binding or
 FT transfer activity"
 XX
 XX WO9634888-A1.
 PN
 XX
 XX 07-NOV-1996.
 PD

XX
 PF 01-MAY-1996; 96WO-US006147.
 XX
 PR 01-MAY-1995; 95US-00432483.
 XX
 XX (TCEL-) T CELL SCI INC.
 XX
 XX Rittershaus CW, Thomas LJ;
 XX
 XX WPI; 1996-506103/50.
 DR
 XX Cholesteryl ester transfer protein B cell epitope linked to T cell
 PT epitope - used to generate vaccine to regulate CETP activity for
 PT decreasing the risk of developing a cardiovascular disease e.g.
 PT atherosclerosis.
 XX
 XX Disclosure; Page 7; 72pp; English.
 XX
 XX A multivalent vaccine comprises an immunogenic helper T-cell epitope of
 CC tetanus toxoid protein covalently linked to the B-cell epitopes of human
 CC cholesteryl ester transfer protein (CETP) (see also AAW06127). The
 CC vaccine elicits an immune response against endogenous CETP activity, and
 CC is used to treat or prevent a cardiovascular disease, such as
 CC atherosclerosis
 XX
 XX Sequence 50 AA;
 SQ

Query Match 100.0%; Score 74; DB 2; Length 50;
 Best Local Similarity 100.0%; Pred. No. 3.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 Db 2 QYIKANSKFIGITEL 16

RESULT 116
 AAB49091
 ID AAB49091 standard; protein; 51 AA.
 XX
 XX AAB49091;
 AC
 XX
 XX 11-SEP-2003 (revised)
 DT
 DT 27-MAR-2001 (first entry)
 XX
 XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:27.
 DE
 XX
 XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX
 XX Homo sapiens.
 OS
 OS Clostridium tetani.
 OS Chimeric.
 XX
 XX WO200072876-A2.
 PN
 XX
 XX 07-DEC-2000.
 PD
 XX
 XX 01-JUN-2000; 2000WO-US015239.
 PF
 XX
 XX 01-JUN-1999; 99US-0137010P.
 PR
 XX (NEUR-) NEURALAB LTD.
 XX
 XX Schenk DB;
 PI
 XX WPI; 2001-070921/08.
 XX
 XX

PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

SQ Sequence 51 AA;

Query Match 100.0%; Score 74; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 117

AAB46195
 ID AAB46195 standard; peptide; 51 AA.

XX AAB46195;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid epitope fusion construct #15.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO2000072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Vednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (FC
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX Sequence 51 AA;

Query Match 100.0%; Score 74; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 8 QYIKANSKFIGITEL 22

RESULT 118

ADIS7373

ID ADIS7373 standard; peptide; 51 AA.

XX ADIS7373;

XX 06-MAY-2004 (first entry)

XX Synthetic human chorionic gonadotropin peptide antigen CTP37-TT2.

XX Vaccine; drug delivery; encapsulation; human chorionic gonadotropin; HCG;
 KW tetanus toxoid; contraceptive.

XX Homo sapiens.

OS Clostridium tetani.

XX Chimeric.

PH Key Location/Qualifiers

FT Region 2..16

FT /label= TT2

FT Region 17..51

FT /label= CTP37

XX WO2004005325-A2.

XX 15-JAN-2004.

XX 10-JUL-2003; 2003WO-US021861.

XX 10-JUL-2002; 2002US-0394967P.

XX (OHIS) UNIV OHIO STATE RES FOUND.

XX Cui C, Schwendeman SP, Stevens VC;

XX WPI; 2004-142960/14.

XX Enhancing immunogenic response in mammalian subject by administering
 PT biodegradable polymeric delivery system comprising one or more antigens

PT and one or more basic additives to mammalian subject.
 XX
 PS Example 1; Page 12; 39pp; English.
 XX
 CC A claimed method of enhancing an immunogenic response in a mammal
 CC comprises administering a biodegradable polymeric delivery system
 CC comprising one or more antigens and one or more basic additives. In a
 CC highly preferred embodiment, the basic additive is MgCO₃ and the
 CC biodegradable polymeric delivery system is a poly(lactide-co-glycolide)
 CC (PLGA) microparticle. The present sequence is that of the CTP37-TT2
 CC antigen. This synthetic antigen comprises a B-cell epitope from the C-
 CC terminal portion of the beta chain of human chorionic gonadotropin (HCG
 CC residues 109-145) and a universal or promiscuous T-cell epitope from
 CC tetanus toxoid (residues 830-844, designated as TT2). The peptide
 CC includes an N-terminal Cys residue to facilitate further conjugation via
 CC a thiol group without altering the B- and T-cell epitopes. In an example
 CC from the invention, the immunogenicity of CTP37-TT2 peptide antigen was
 CC shown to be enhanced by encapsulation or surface-conjugation in PLGA
 CC microparticles. Combination of surface-conjugated and encapsulated CTP37-
 CC TT2 peptide antigen provided a long-lasting high anti-HCG antibody
 CC response after a single dose. The stability of the encapsulated antigen
 CC more closely mimicked stability in wetted solid-state than stability in
 CC dilute solution. This may provide stability guidelines for handling the
 CC antigen in solution and for its potential use as a slow-release birth
 CC control vaccine.
 XX
 SQ Sequence 51 AA;
 Query Match 100.0%; Score 74; DB 8; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 2 QYIKANSKFIGITEL 16
 RESULT 119
 ADP02918
 ID ADP02918 standard; peptide; 51 AA.
 XX
 AC ADP02918;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #30 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PS (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 PA Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 XX
 CC Preventing or treating disease such as Parkinson's disease characterized
 CC by Lewy bodies or alpha-synuclein aggregation in brain by administering
 CC agent that induces immunogenic response against alpha-synuclein and/or
 CC beta-amyloid.

PS Disclosure; SEQ ID NO 51; 78pp; English.
 XX
 CC The invention relates to a method of preventing (MI) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (MI) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 51 AA;
 Query Match 100.0%; Score 74; DB 8; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 8 QYIKANSKFIGITEL 22
 RESULT 120
 ADL90093
 ID ADL90093 standard; protein; 54 AA.
 XX
 AC ADL90093;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Anti-melanoma drug self epitope, SEQ ID 33.
 XX
 KW Immune response; immunoglobulin; Ig; anti-melanoma; cytostatic.
 XX
 OS Unidentified.
 XX
 WO2004027049-A2.
 XX
 PD 01-APR-2004.
 XX
 PF 18-SEP-2003; 2003WO-US030189.
 XX
 PR 20-SEP-2002; 2002US-0412219P.
 PR 14-MAR-2003; 2003WO-US007995.
 XX
 PA (ASTR-) ASTRAL INC.
 XX
 PI Bot A, Wang L, Smith D, Phillips B;
 XX WPI; 2004-295415/27.
 XX
 DR
 XX
 PT Generating an immune response to an antigen, useful for generating
 PT desired T cell responses comprises administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 XX
 PS Disclosure; Fig 1K; 154pp; English.
 XX
 CC The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX
 SQ Sequence 54 AA;
 Query Match 100.0%; Score 74; DB 8; Length 54;

Best Local Similarity 100.0%; Pred. No. 3.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | |
Db 1 QYIKANSKFIGITEL 15

RESULT 121

ADP02916
ID ADP02916 standard; peptide; 56 AA.

AC ADP02916;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #28 for treating neurodegenerative disorder.

XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.

OS
XX WO2004041067-A2.
PN
XX 21-MAY-2004.

XX 31-OCT-2003; 2003WO-US034527.
PF
XX 01-NOV-2002; 2002US-0423012P.
PR
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.

XX Schenk DB, Masliah E;
PI
XX WPI; 2004-411388/38.

XX Preventing or treating disease such as Parkinson's disease characterized
XX by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 49; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
XX disease characterized by Lewy bodies or alpha-synuclein aggregation in
XX the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.

XX Sequence 56 AA;

Query Match 100.0%; Score 74; DB 8; Length 56;
Best Local Similarity 100.0%; Pred. No. 4e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | |
Db 22 QYIKANSKFIGITEL 36

RESULT 122

ADM06902

ID ADM06902 standard; peptide; 64 AA.

XX
AC ADM06902;
XX
XX 17-JUN-2004 (first entry)
XX

XX Mature rat ghrelin with added epitopes (peptide 3), SEQ ID NO:15.
XX
XX Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
KW immunomodulator; vulnery; vaccine; rat; epitope.

XX Rattus sp.
OS Synthetic.

XX WO2004024183-A1.

XX 25-MAR-2004.

XX 12-SEP-2003; 2003WO-DK000592.

XX 12-SEP-2002; 2002DK-00001345.

PR 12-SEP-2002; 2002US-0410164P.

XX (PHAR-) PHARMEXA AS.

XX Bovine TEG, Klysner S;

XX WPI; 2004-329403/30.

XX Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.

XX Example 1; SEQ ID NO 15; 83pp; English.

XX The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting a
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against unmodified autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature rat ghrelin with added epitopes used in an example of
CC the invention.

XX Sequence 64 AA;

Query Match 100.0%; Score 74; DB 8; Length 64;
Best Local Similarity 100.0%; Pred. No. 4.6e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | |
Db 1 QYIKANSKFIGITEL 15

RESULT 123
ADM06904
ID ADM06904 standard; peptide; 68 AA.
XX AC ADM06904;
XX DT 17-JUN-2004 (first entry)
XX DE Mature ghrelin with added epitopes (peptide 5), SEQ ID NO:17.
XX KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
XX KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
XX KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
XX KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
XX KW immunomodulator; vulnery; vaccine; epitope.
XX OS Synthetic.
XX OS Unidentified.
XX PN WO2004024183-A1.
XX PD 25-MAR-2004.
XX PF 12-SEP-2003; 2003WO-DK000592.
XX PR 12-SEP-2002; 2002DK-00001345.
XX PR 12-SEP-2002; 2002US-0410164P.
XX PA (PHAR-) PHARMEXA AS.
XX PI Boving TEG, Klysner S;
XX PI WPI; 2004-329403/30.
XX DR Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.
XX PS Example 1; SEQ ID NO 17; 83pp; English.
XX CC The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature ghrelin with added epitopes used in an example of the
XX invention.
XX SQ Sequence 68 AA;
Query Match 100.0%; Score 74; DB 8; Length 68;
Best Local Similarity 100.0%; Pred. No. 4.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB 3 QYIKANSKFIGITEL 17

RESULT 124
ADM06903
ID ADM06903 standard; peptide; 68 AA.
XX AC ADM06903;
XX DT 17-JUN-2004 (first entry)
XX DE Mature ghrelin with added epitopes (peptide 4), SEQ ID NO:16.
XX KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
XX KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
XX KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
XX KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
XX KW immunomodulator; vulnery; vaccine; epitope.
XX OS Synthetic.
XX OS Unidentified.
XX PN WO2004024183-A1.
XX PD 25-MAR-2004.
XX PF 12-SEP-2003; 2003WO-DK000592.
XX PR 12-SEP-2002; 2002DK-00001345.
XX PR 12-SEP-2002; 2002US-0410164P.
XX PA (PHAR-) PHARMEXA AS.
XX PI Boving TEG, Klysner S;
XX PI WPI; 2004-329403/30.
XX DR Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.
XX PS Example 1; SEQ ID NO 16; 83pp; English.
XX CC The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature ghrelin with added epitopes used in an example of the
XX invention.
XX SQ Sequence 68 AA;
Query Match 100.0%; Score 74; DB 8; Length 68;
Best Local Similarity 100.0%; Pred. No. 4.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
DB 3 QYIKANSKFIGITEL 17

Db 52 QYIKANSKFIGITEL 66
 RESULT 125
 AAB46190
 ID AAB46190 standard; peptide; 72 AA.
 XX
 AC AAB46190;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid epitope fusion construct #10.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072880-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX
 DR WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 32; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 72 AA;
 Query Match 100.0%; Score 74; DB 4; Length 72;
 Best Local Similarity 100.0%; Pred. NO. 5.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 37 QYIKANSKFIGITEL 51
 RESULT 126
 ADP02897
 ID ADP02897 standard; peptide; 74 AA.
 XX
 AC ADP02897;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #9 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 30; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 74 AA;
 Query Match 100.0%; Score 74; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. NO. 5.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 127
 ADP02915
 ID ADP02915 standard; peptide; 79 AA.
 XX
 AC ADP02915;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #27 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX

DE Fusion protein #9 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 30; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 74 AA;
 Query Match 100.0%; Score 74; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. NO. 5.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 127
 ADP02915
 ID ADP02915 standard; peptide; 79 AA.
 XX
 AC ADP02915;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #27 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX

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PD XX 21-MAY-2004.
PF XX
PX 31-OCT-2003; 2003WO-US034527.
PR 01-NOV-2002; 2002US-0423012P.
XX (ELAN-) ELAN PHARM INC.
PA (REGC ) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
PI
XX
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 48; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 79 AA;
SQ
Query Match 100.0%; Score 74; DB 8; Length 79;
Best Local Similarity 100.0%; Pred. No. 5.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB |||||
37 QYIKANSKFIGITEL 51

RESULT 128
ADP02896
ID ADP02896 standard; peptide; 101 AA.
XX
XX ADP02896;
AC
XX
XX 12-AUG-2004 (first entry)
DT
XX
XX Fusion protein #8 for treating neurodegenerative disorder.
DE
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.
OS
XX WO2004041067-A2.
PN
XX
XX 21-MAY-2004.
PD
XX
XX 31-OCT-2003; 2003WO-US034527.
PF
XX
XX 01-NOV-2002; 2002US-0423012P.
PR
XX (ELAN-) ELAN PHARM INC.
PA (REGC ) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
PI
XX
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 48; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 79 AA;
SQ
Query Match 100.0%; Score 74; DB 8; Length 79;
Best Local Similarity 100.0%; Pred. No. 5.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB |||||
37 QYIKANSKFIGITEL 51

RESULT 129
AAB20147
ID AAB20147 standard; protein; 109 AA.
XX
XX AAB20147;
AC
XX
XX 30-APR-2001 (first entry)
DT
XX
XX Growth differentiation factor 8 AutoVac construct GDF-8 P2-3.
DE
XX
XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW cardiant; human; mutant; mutein.
XX
XX Homo sapiens.
OS
XX Clostridium tetani.
OS
XX Synthetic.
OS
XX Chimeric.
XX
XX Key Location/Qualifiers
FH 1. 82
FT Region /note= "identical to residues 267-348 of human GDF-8"
FT Misc-difference 73 /note= "Cys-73 may be substituted by Ser to avoid
FT disulfide bond formation"
FT Region 83. .97
FT Misc-difference 90. .91 /note= "tetanus toxoid P2 epitope"
FT FT 98. .109 /note= "optionally replaced by Glu-Gly"
FT Region
FT FT
XX WO200105820-A2.
PN
XX
XX 25-JAN-2001.
PD
XX
XX 20-JUL-2000; 2000WO-DK000413.
PF
XX
XX

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PR 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 PA (MEBI-) M & E BIOTECH AS.
 PI Halkier T, Mouritsen S, Klysner S;
 XX WPI; 2001-112680/12.
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 99; 110pp; English.
 XX
 CC The present sequence is that of AutoVac construct GDF-8 P2-3, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 83-97 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 83 QYIKANSKFIGITEL 97
 RESULT 130
 AAB20146
 ID AAB20146 standard; protein; 109 AA.
 XX
 AC AAB20146;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-2.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 1..51
 FT /note= "identical to residues 267-317 of human GDF-8"
 FT Region 52..66
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 67..109
 FT /note= "identical to residues 333-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid

FT disulfide bond formation"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 XX
 XX WO200105820-A2.
 XX
 XX 25-JAN-2001.
 XX
 XX 20-JUL-2000; 2000WO-DK000413.
 XX
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Halkier T, Mouritsen S, Klysner S;
 PI WPI; 2001-112680/12.
 DR
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 97-98; 110pp; English.
 XX
 CC The present sequence is that of AutoVac construct GDF-8 P2-2, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 52-66 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 52 QYIKANSKFIGITEL 66
 RESULT 131
 AAB20145
 ID AAB20145 standard; protein; 109 AA.
 XX
 AC AAB20145;
 XX
 XX 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-1.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.

XX PH Key Location/Qualifiers
 FT Region 1..17
 FT /note= "identical to residues 267-283 of human GDF-8"
 FT Region 18..32
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 33..109
 FT /note= "identical to residues 299-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 XX WO200105820-A2.
 PN
 XX
 XX 25-JAN-2001.
 XX
 XX 20-JUL-2000; 2000WO-DK000413.
 XX
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Halkier T, Mouritsen S, Klysner S;
 XX
 XX WPI; 2001-112680/12.
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 FT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 FT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 96; 110pp; English.
 XX
 CC The present sequence is that of AutoVac construct GDF-8 P2-1, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 18-32 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 18 QYIKANSKFIGITEL 32
 RESULT 132
 AAB45502
 ID AAB45502 standard; protein; 116 AA.
 XX
 AC AAB45502;
 XX
 XX 26-FEB-2001 (first entry)
 DT
 XX
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 XX 26-FEB-2001 (first entry)
 DT
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 XX Mus musculus.
 XX Clostridium tetani.
 OS
 OS WO200065058-A1.
 PN
 XX
 XX 02-NOV-2000.
 XX
 XX 19-APR-2000; 2000WO-DK000205.
 XX
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Klysner S;
 PI
 XX
 XX WPI; 2000-672791/65.
 DR
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 FT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 FT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 129-130; 172pp; English.
 XX
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 116 AA;
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 XX 26-FEB-2001 (first entry)
 DT
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 XX Mus musculus.
 XX Clostridium tetani.
 OS
 OS WO200065058-A1.
 PN
 XX
 XX 02-NOV-2000.
 XX
 XX 19-APR-2000; 2000WO-DK000205.
 XX
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX

DE Modified murine interleukin-5 SEQ ID NO: 14.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 OS
 OS WO200065058-A1.
 PN
 XX
 XX 02-NOV-2000.
 XX
 XX 19-APR-2000; 2000WO-DK000205.
 XX
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Klysner S;
 PI
 XX
 XX WPI; 2000-672791/65.
 DR
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 FT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 FT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 129-130; 172pp; English.
 XX
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 116 AA;
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 XX 26-FEB-2001 (first entry)
 DT
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 XX Mus musculus.
 XX Clostridium tetani.
 OS
 OS WO200065058-A1.
 PN
 XX
 XX 02-NOV-2000.
 XX
 XX 19-APR-2000; 2000WO-DK000205.
 XX
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX

XX PA (MEBI-) M & E BIOTECH AS.
 XX PI Klysner S;
 XX XX WPI; 2000-672791/65.
 DR N-PSDB; AAC68879.
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Disclosure; Page 159-160; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 XX Sequence 116 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 30 QYIKANSKFIGITEL 44
 |||||
 RESULT 134
 AAB45491
 ID AAB45491 standard; protein; 118 AA.
 XX
 XX AAB45491;
 XX
 XX 26-FEB-2001 (first entry)
 DE Modified human interleukin-5 SEQ ID NO: 3.
 XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 XX Homo sapiens.
 OS Clostridium tetani.
 XX
 XX WO200065058-A1.
 FN
 XX 02-NOV-2000.
 PD
 XX 19-APR-2000; 2000WO-DK000205.
 PF
 XX 23-APR-1999; 99DK-00000552.
 PR
 XX 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Klysner S;
 PI
 XX WPI; 2000-672791/65.
 DR
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 120; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These

CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 XX Sequence 118 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 118;
 Best Local Similarity 100.0%; Pred. No. 9e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 32 QYIKANSKFIGITEL 46
 |||||
 RESULT 135
 AAB45518
 ID AAB45518 standard; protein; 118 AA.
 XX
 XX AAB45518;
 AC
 XX 26-FEB-2001 (first entry)
 DT
 XX Modified human interleukin-5 SEQ ID NO: 36.
 DE
 XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 XX Homo sapiens.
 OS Clostridium tetani.
 XX
 XX WO200065058-A1.
 FN
 XX 02-NOV-2000.
 PD
 XX 19-APR-2000; 2000WO-DK000205.
 PF
 XX 23-APR-1999; 99DK-00000552.
 PR
 XX 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Klysner S;
 PI
 XX WPI; 2000-672791/65.
 DR
 XX N-PSDB; AAC68871.
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 146; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 XX Sequence 118 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 118;
 Best Local Similarity 100.0%; Pred. No. 9e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 |||||

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Db          32 QYIKANSKFIGITEL 46

RESULT 136
AAB45527
ID AAB45527 standard; protein; 122 AA.
XX
AC AAB45527;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 54.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 3; Page 130-131; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
SQ Sequence 122 AA;

Query Match 100.0%; Score 74; DB 3; Length 122;
Best Local Similarity 100.0%; Pred. No. 9.3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 QYIKANSKFIGITEL 15
DB 57 QYIKANSKFIGITEL 71

RESULT 138
AAB45504
ID AAB45504 standard; protein; 122 AA.
XX
AC AAB45504;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 16.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;

```

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Db          32 QYIKANSKFIGITEL 46

RESULT 136
AAB45527
ID AAB45527 standard; protein; 122 AA.
XX
AC AAB45527;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 54.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
DR N-PSDB; AAC68880.
XX
PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 4; Page 161; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
SQ Sequence 122 AA;

Query Match 100.0%; Score 74; DB 3; Length 122;
Best Local Similarity 100.0%; Pred. No. 9.3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 QYIKANSKFIGITEL 15
DB 84 QYIKANSKFIGITEL 98

RESULT 137
AAB45503
ID AAB45503 standard; protein; 122 AA.
XX
AC AAB45503;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 15.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.

```

XX WPI; 2000-672791/65.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 4; Page 131; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 122 AA;
 SQ Query Match 100.0%; Score 74; DB 3; Length 122;
 Best Local Similarity 100.0%; Pred. NO. 9.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 84 QYIKANSKFIGITEL 98
 RESULT 139
 AAB45519
 ID AAB45519 standard; protein; 124 AA.
 XX
 AC AAB45519;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified human interleukin-5 SEQ ID NO: 38.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 XX
 XX WO200065058-A1.
 XX
 PD 02-NOV-2000.
 XX
 PF 19-APR-2000; 2000WO-DK000205.
 XX
 PR 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Klysner S;
 XX
 XX WPI; 2000-672791/65.
 DR N-PSDB; AAC68872.
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 4; Page 147-148; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,

CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 SQ Sequence 124 AA;
 Query Match 100.0%; Score 74; DB 3; Length 124;
 Best Local Similarity 100.0%; Pred. NO. 9.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 86 QYIKANSKFIGITEL 100
 RESULT 140
 AAB45523
 ID AAB45523 standard; protein; 124 AA.
 XX
 AC AAB45523;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 46.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 XX
 XX WO200065058-A1.
 XX
 PD 02-NOV-2000.
 XX
 PF 19-APR-2000; 2000WO-DK000205.
 XX
 PR 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Klysner S;
 XX
 XX WPI; 2000-672791/65.
 DR N-PSDB; AAC68876.
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 1; Page 154-155; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 124 AA;
 SQ Query Match 100.0%; Score 74; DB 3; Length 124;
 Best Local Similarity 100.0%; Pred. NO. 9.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 86 QYIKANSKFIGITEL 100
 RESULT 141

XX	PD	02-NOV-2000.	
XX	PF	19-APR-2000; 2000WO-DK000205.	
XX	PR	23-APR-1999; 99DK-00000552.	
XX	PR	06-MAY-1999; 99US-0132811P.	
XX	PA	(MEBI-) M & E BIOTECH AS.	
XX	PI	Klysner S;	
XX	DR	WPI; 2000-672791/65.	
XX	PT	Down-regulating interleukin 5 (IL-5) activity in humans by administering IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or amelioration of asthma or other chronic allergic conditions.	
XX	PS	Example 5; Page 132; 172pp; English.	
XX	CC	The present invention is concerned with methods of treating asthma, eosinophilia, allergic rhinitis and other allergic diseases. These involve the use of interleukin-5 (IL-5) analogues and modified IL-5 proteins and their coding sequences to down-regulate IL-5 activity and thus reduce eosinophil numbers. The allergic diseases may be treated using autovaccines, nucleic acid vaccines or live vaccines. In addition, it is possible that they may be used in the treatment of cancer and helminthic infections	
XX	SQ	Sequence 124 AA;	
		Query Match 100.0%; Score 74; DB 3; Length 124;	
		Best Local Similarity 100.0%; Pred. No. 9.5e-06;	
		Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0	
QY		1 QYIKANSKFIGITEL 15	
Db		108 QYIKANSKFIGITEL 122	
RESULT 143			
AAB45501			
ID		AAB45501 standard; protein; 124 AA.	
XX	AC	AAB45501;	
XX	DT	26-FEB-2001 (first entry)	
XX	DE	Modified murine interleukin-5 SEQ ID NO: 13.	
XX	KW	Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection; cancer; eosinophilia; vaccine; allergic rhinitis.	
XX	OS	Mus musculus.	
XX	OS	Clostridium tetani.	
XX	PN	WO200065058-A1.	
XX	PD	02-NOV-2000.	
XX	PF	19-APR-2000; 2000WO-DK000205.	
XX	PR	23-APR-1999; 99DK-00000552.	
XX	PR	06-MAY-1999; 99US-0132811P.	
XX	PA	(MEBI-) M & E BIOTECH AS.	
XX	PI	Klysner S;	
XX	DR	WPI; 2000-672791/65.	
XX	PT	Down-regulating interleukin 5 (IL-5) activity in humans by administering IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or amelioration of asthma or other chronic allergic conditions.	
XX	PS	Example 3; Page 121; 172pp; English.	
XX	CC	The present invention is concerned with methods of treating asthma, eosinophilia, allergic rhinitis and other allergic diseases. These involve the use of interleukin-5 (IL-5) analogues and modified IL-5 proteins and their coding sequences to down-regulate IL-5 activity and thus reduce eosinophil numbers. The allergic diseases may be treated using autovaccines, nucleic acid vaccines or live vaccines. In addition, it is possible that they may be used in the treatment of cancer and helminthic infections	
XX	SQ	Sequence 124 AA;	
		Query Match 100.0%; Score 74; DB 3; Length 124;	
		Best Local Similarity 100.0%; Pred. No. 9.5e-06;	
		Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
QY		1 QYIKANSKFIGITEL 15	
Db		59 QYIKANSKFIGITEL 73	
RESULT 142			
AAB45505			
ID		AAB45505 standard; protein; 124 AA.	
XX	AC	AAB45505;	
XX	DT	26-FEB-2001 (first entry)	
XX	DE	Modified murine interleukin-5 SEQ ID NO: 17.	
XX	KW	Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection; cancer; eosinophilia; vaccine; allergic rhinitis.	
XX	OS	Mus musculus.	
XX	OS	Clostridium tetani.	
XX	PN	WO200065058-A1.	

PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 4; Page 129; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||

Db 85 QYIKANSKFIGITEL 99

RESULT 144

AAB45493
 ID AAB45493 standard; protein; 124 AA.

XX AC AAB45493;

XX DT 26-FEB-2001 (first entry)

XX DE Modified human interleukin-5 SEQ ID NO: 5.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX XX 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (WEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX XX WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 4; Page 121-123; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||

Db 86 QYIKANSKFIGITEL 100

RESULT 145

AAB45517
 ID AAB45517 standard; protein; 124 AA.

XX AC AAB45517;

XX DT 26-FEB-2001 (first entry)

XX DE Modified human interleukin-5 SEQ ID NO: 34.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX XX 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (WEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX XX WPI; 2000-672791/65.

XX N-PSDB; AAC68870.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 3; Page 144; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 59 QYIKANSKFIGITEL 73

RESULT 146

AAB45490
 ID AAB45490 standard; protein; 126 AA.

XX AC AAB45490;

XX DT 26-FEB-2001 (first entry)

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XX DE Modified human interleukin-5 SEQ ID NO: 2.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Klysner S;
XX PI WPI; 2000-672791/65.
XX DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX PS Example 1; Page 119; 172pp; English.
XX CC The present invention is concerned with methods of treating asthma,
XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX CC proteins and their coding sequences to down-regulate IL-5 activity and
XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX CC it is possible that they may be used in the treatment of cancer and
XX CC helminthic infections
XX SQ Sequence 126 AA;

Query Match 100.0%; Score 74; DB 3; Length 126;
Best Local Similarity 100.0%; Pred. No. 9.7e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 110 QYIKANSKFIGITEL 124

RESULT 148
AAB45494
ID AAB45514 standard; protein; 126 AA.
XX AC AAB45514;
XX DT 26-FEB-2001 (first entry)
XX DE Modified human interleukin-5 SEQ ID NO: 28.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Klysner S;
XX PI WPI; 2000-672791/65.
XX DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX PS Example 1; Page 139; 172pp; English.
XX CC The present invention is concerned with methods of treating asthma,

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XX DE Modified human interleukin-5 SEQ ID NO: 2.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Klysner S;
XX PI WPI; 2000-672791/65.
XX DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX PS Example 1; Page 119; 172pp; English.
XX CC The present invention is concerned with methods of treating asthma,
XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX CC proteins and their coding sequences to down-regulate IL-5 activity and
XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX CC it is possible that they may be used in the treatment of cancer and
XX CC helminthic infections
XX SQ Sequence 126 AA;

Query Match 100.0%; Score 74; DB 3; Length 126;
Best Local Similarity 100.0%; Pred. No. 9.7e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 87 QYIKANSKFIGITEL 101

RESULT 147
AAB45494
ID AAB45494 standard; protein; 126 AA.
XX AC AAB45494;
XX DT 26-FEB-2001 (first entry)
XX DE Modified human interleukin-5 SEQ ID NO: 6.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.

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CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 126 AA;

Query Match 100.0%; Score 74; DB 3; Length 126;
 Best Local Similarity 100.0%; Pred. No. 9.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFQIGITEL 15
 |||||
 Db 88 QYIKANSKFQIGITEL 102

RESULT 149

ID AAB49089 standard; protein; 136 AA.

XX AAB49089;

XX 11-SEP-2003. (revised)

DT 27-MAR-2001 (first entry)

XX Amyloid beta tetanus toxoid/HA/CS fusion protein, SEQ ID NO:25.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Influenza virus.

OS Plasmodium falciparum.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least

CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 XX 2003 to standardise OS field)

XX SQ Sequence 136 AA;

Query Match 100.0%; Score 74; DB 4; Length 136;

Best Local Similarity 100.0%; Pred. No. 1.1e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFQIGITEL 15

|||||
 Db 37 QYIKANSKFQIGITEL 51

RESULT 150

AAY82634

ID AAY82634 standard; peptide; 137 AA.

XX AAY82634;

XX 07-AUG-2000 (first entry)

XX Tetanus toxoid T cell epitopes and Der pII B cell epitopes peptide.

XX T cell epitope; B cell epitope; allergy; allergen; antigenic;
 KW antiallergic; antiasthmatic; antiinflammatory; dermatological;
 KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
 KW atopic dermatitis; acute urticaria; chronic urticaria;
 KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
 KW anaphylactic reaction; drug hypersensitivity; allergic reaction.

XX Dermatophagoides pteronyssinus.

OS Clostridium tetani.

OS Synthetic.

XX WO200006694-A2.

XX 10-FEB-2000.

XX 20-JUL-1999; 99WO-BE000092.

XX 30-JUL-1998; 98EP-00870167.

XX (UNIO) UCB SA.

XX Saint-Remy J, Jacquemin M;

XX WPI; 2000-422470/36.

XX New compound for prevention and treatment of allergies comprises at least
 PT one allergen antigenic determinant recognized by a B cell and at least
 PT one antigenic determinant which does not trigger T cell activation.

XX Claim 8; Page 35; 50pp; English.

XX The present invention describes a compound (I) for the prevention and/or

CC treatment of allergy. The compound comprises at least one allergen
 CC antigenic determinant (i) recognised by a B cell or an antibody secreted
 CC by a B cell of a non-atopic individual and at least one antigenic
 CC determinant (ii) different from the allergen that triggers T cell
 CC activation. (i) has anti-allergic, antiasthmatic, anti-inflammatory,
 CC dermatological and immunosuppressive activities, and can be used in a
 CC vaccine. (ii) may be used in a pharmaceutical or cosmetic medicament to
 CC treat and/or prevent allergies or a disease of allergic origin,
 CC especially hypersensitivities. These include rhinitis, sinusitis,
 CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
 CC urticaria, gastro-intestinal syndromes associated with the ingestion of
 CC food allergens, oro-pharyngeal syndromes, anaphylactic reactions
 CC associated with drug hypersensitivities and/or a mixture of these. The
 CC use of (i) in the treatment of allergic conditions avoids the need for
 CC drug treatment, which often causes undesirable side-effects. Also, prior
 CC art drug therapies alleviate symptoms, but do not influence their causes,
 CC however (ii) actually combats the cause of an allergic reaction. The
 CC present sequence represents a specifically claimed compound peptide
 CC sequence from the present invention
 XX
 SQ Sequence 137 AA;

Query Match 100.0%; Score 74; DB 3; Length 137;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 2 QYIKANSKFIGITEL 16

RESULT 151

AAB45510
 ID AAB45510 standard; protein; 139 AA.

XX
 AC AAB45510;

DT 26-FEB-2001 (first entry)

DE Modified murine interleukin-5 SEQ ID NO: 22.

XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX Mus musculus.
 OS Clostridium tetani.

XX WO200065058-A1.

XX 02-NOV-2000.

PF 19-APR-2000; 2000WO-DK000205.

XX 23-APR-1999; 99DK-00000552.

PR 06-MAY-1999; 99US-0132811P.

XX (MEBI-) M & E BIOTECH AS.

PA Klysner S;

PI WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX Example 10; Page 137; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated

CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 139 AA;

Query Match 100.0%; Score 74; DB 3; Length 139;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 84 QYIKANSKFIGITEL 98

RESULT 152

AAB45499

ID AAB45499 standard; protein; 141 AA.

XX
 AC AAB45499;

DT 26-FEB-2001 (first entry)

DE Modified human interleukin-5 SEQ ID NO: 11.

XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX Homo sapiens.

OS Clostridium tetani.

XX WO200065058-A1.

XX 02-NOV-2000.

XX 19-APR-2000; 2000WO-DK000205.

XX 23-APR-1999; 99DK-00000552.

PR 06-MAY-1999; 99US-0132811P.

XX (MEBI-) M & E BIOTECH AS.

PA Klysner S;

PI WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX Example 10; Page 127; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 141 AA;

Query Match 100.0%; Score 74; DB 3; Length 141;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 86 QYIKANSKFIGITEL 100

RESULT 153

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AAB45530
ID AAB45530 standard; protein; 145 AA.
AC
XX
AC AAB45530;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 60.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
XX WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68875.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 12; Page 153; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 145 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 145;
Best Local Similarity 100.0%; Pred. No. 1.1e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 86 QYIKANSKFIGITEL 100

RESULT 154
AAB45522
ID AAB45522 standard; protein; 147 AA.
XX
AC AAB45522;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 44.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX Homo sapiens.
OS Clostridium tetani.
XX
XX

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PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
XX WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68875.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 12; Page 153; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 147 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 147;
Best Local Similarity 100.0%; Pred. No. 1.1e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 88 QYIKANSKFIGITEL 102

RESULT 155
AAW81331
ID AAW81331 standard; protein; 158 AA.
XX
AC AAW81331;
XX
XX 21-APR-1999 (first entry)
XX
DE TNF2-7, a TNF-alpha analogue.
XX
KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
KW asthma.
XX
XX Synthetic.
OS Homo sapiens.
XX
XX WO9846642-A1.
XX
PD 22-OCT-1998.
XX
PF 15-APR-1998; 98WO-DK000157.
XX
PR 15-APR-1997; 97DK-00000418.
XX
PR 24-APR-1997; 97US-0044187P.
XX
PA (FERR ) FARM LAB FERRING AS.
XX
XX Jensen MR, Mouritsen S, Elaner H, Dalum I;
XX

```

DR WPI; 1998-594561/50.
 XX N-PSDB; AAV68420.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS Claim 13; Page 73; 134pp; English.
 XX
 XX The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 77 QYIKANSKFIGITEL 91
 RESULT 156
 AAW81328
 ID AAW81328 standard; protein; 158 AA.
 AC AAW81328;
 XX
 DT 21-APR-1999 (first entry)
 DE TNF2-3, a TNF-alpha analogue.
 XX
 KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 PN W09846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PF 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (FERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68417.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX
 PS Claim 14; Page 67-68; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 66 QYIKANSKFIGITEL 80
 RESULT 157
 AAW81329
 ID AAW81329 standard; protein; 158 AA.
 AC AAW81329;
 XX
 DT 21-APR-1999 (first entry)
 DE TNF2-4, a TNF-alpha analogue.
 XX
 KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 PN W09846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PF 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (FERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68418.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS Example 1; Page 69-70; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by

CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 CC
 SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 115 QYIKANSKFIGITEL 129

RESULT 158
 AAW81330
 ID AAW81330 standard; protein; 158 AA.

AC AAW81330;

DT 21-APR-1999 (first entry)

DE TNF2-5, a TNF-alpha analogue.

KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.

OS Synthetic.

OS Homo sapiens.

FN WO9846642-A1.

XX 22-OCT-1998.

PF 15-APR-1998; 98WO-DK000157.

PR 15-APR-1997; 97DK-00000418.

PR 24-APR-1997; 97US-0044187P.

PA (FERR) FARM LAB FERRING AS.

PI Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX WPI; 1998-594561/50.

DR N-PSDB; AAV68419.

PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

PS Claim 12; Page 71; 134pp; English.

XX The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting

CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 CC
 SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 133 QYIKANSKFIGITEL 147

RESULT 159
 AAW81327
 ID AAW81327 standard; protein; 158 AA.

XX

AC AAW81327;

XX 21-APR-1999 (first entry)

DE TNF2-1, a TNF-alpha analogue.

KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.

XX Synthetic.

OS Homo sapiens.

XX WO9846642-A1.

XX 22-OCT-1998.

PF 15-APR-1998; 98WO-DK000157.

PR 15-APR-1997; 97DK-00000418.

PR 24-APR-1997; 97US-0044187P.

XX (FERR) FARM LAB FERRING AS.

XX Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX WPI; 1998-594561/50.

DR N-PSDB; AAV68416.

PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

PS Example 1; Page 65-66; 134pp; English.

XX The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma

```

XX SQ Sequence 158 AA;
Query Match 100.0%; Score 74; DB 2; Length 158;
Best Local Similarity 100.0%; Pred. No. 1.2e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 11 QYIKANSKFIGITEL 25

RESULT 160
ABB07277
ID ABB07277 standard; protein; 158 AA.
XX AC ABB07277;
XX DT 26-MAR-2002 (first entry)
XX DE Human TNF-alpha analogue TNF2-7.
XX KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
KW antiarthritic; antitumor; cytostatic; antidiabetic; antipsoriatic;
KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
KW TNF2-7.
XX OS Homo sapiens.
XX PN WO200197837-A1.
XX PD 27-DEC-2001.
XX PF 20-JUN-2001; 2001WO-DK000431.
XX PR 21-JUN-2000; 2000DK-00000966.
XX PA (FERR ) FERRING BV.
XX PI Olesen OF, Balchen T, Bouman MHEM;
XX DR WPI; 2002-114542/15.
XX DR N-PSDB; ABA94387.
XX PT Novel vaccine composition for prevention/treatment of self-protein-
PT mediated pathology such as cancer, diabetes and asthma, comprises
PT modified immunogenic self-protein and surfactant capable of acting as
PT solubilizer.
XX PS Claim 21; Page 39; 55pp; English.
XX CC The invention provides a pharmaceutical vaccine composition (I) for the
CC prevention or treatment of a self-protein-mediated pathology. The
CC composition comprises at least one modified immunogenic self-protein
CC (selected from modified TNF-alpha proteins) and a surfactant capable of
CC acting as a solubilizer. (I) is useful for preventing or treating a self
CC protein-mediated pathology such as an inflammatory disease, rheumatoid
CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
CC subject. (I) comprising cetylpyridinium chloride as a component is useful
CC for immunisation of a human subject or for treatment of a human
CC inflammatory disease. The present sequence represents a human TNF-alpha
CC analogue TNF2-7
XX SQ Sequence 158 AA;
Query Match 100.0%; Score 74; DB 5; Length 158;
Best Local Similarity 100.0%; Pred. No. 1.2e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 115 QYIKANSKFIGITEL 129

RESULT 162
ABB07276

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ID ABB07276 standard; protein; 158 AA.
 XX
 AC ABB07276;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-3.
 XX
 XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-3.
 XX
 XX Homo sapiens.
 OS
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 XX
 XX 21-JUN-2000; 2000DK-00000966.
 PR
 XX (FERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR
 DR N-PSDB; ABA94386.
 XX
 XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 37-38; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF2-3
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 66 QYIKANSKFIGITEL 80
 RESULT 163
 ABB07275
 ID ABB07275 standard; protein; 158 AA.
 XX
 AC ABB07275;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-5.

XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-5.
 XX
 OS Homo sapiens.
 OS
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 XX
 XX 21-JUN-2000; 2000DK-00000966.
 PR
 XX (FERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR
 DR N-PSDB; ABA94385.
 XX
 XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 35-36; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF2-5
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 133 QYIKANSKFIGITEL 147
 RESULT 164
 ABB07280
 ID ABB07280 standard; protein; 158 AA.
 XX
 AC ABB07280;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-1.
 XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-1.
 XX

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OS XX Homo sapiens.
PN XX W0200197837-A1.
XX XX
PD XX 27-DEC-2001.
XX XX
PF XX 20-JUN-2001; 2001WO-DK000431.
XX XX
PR XX 21-JUN-2000; 2000DK-00000966.
XX XX
PA XX (FERR ) FERRING BV.
XX XX
PI XX Olesen OF, Balchen T, Bouman MHEM;
XX XX
DR XX WPI; 2002-114542/15.
DR XX N-PSDB; ABA94390.
XX XX
PT Novel vaccine composition for prevention/treatment of self-protein-
PT mediated pathology such as cancer, diabetes and asthma, comprises
PT modified immunogenic self-protein and surfactant capable of acting as
PT solubilizer.
XX XX
PS Claim 21; Page 44-45; 55pp; English.
XX XX
CC The invention provides a pharmaceutical vaccine composition (I) for the
CC prevention or treatment of a self-protein-mediated pathology. The
CC composition comprises at least one modified immunogenic self-protein
CC (selected from modified TNF-alpha proteins) and a surfactant capable of
CC acting as a solubilizer. (I) is useful for preventing or treating a self
CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
CC subject. (I) comprising cetylpyridinium chloride as a component is useful
CC for immunisation of a human subject or for treatment of a human
CC inflammatory disease. The present sequence represents a human TNF-alpha
CC analogue TNF2-1
XX XX
SQ Sequence 158 AA;
Query Match 100.0%; Score 74; DB 5; Length 158;
Best Local Similarity 100.0%; Pred. No. 1.2e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db 11 QYIKANSKFIGITEL 25
RESULT 165
AAB20153
ID AAB20153 standard; protein; 160 AA.
XX XX
AC AAB20153;
XX XX
DT 30-APR-2001 (first entry)
XX XX
DE Growth differentiation factor 8 AutoVac construct GDF-8 ext.
XX XX
KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW cardiant; human; mutant; mutein.
XX XX
OS Homo sapiens.
OS Clostridium tetani.
OS Synthetic.
OS Chimeric.
XX XX
FH Key Location/Qualifiers
FT Region 1..15
FT /notes "identical to residues 215-230 of human GDF-8"
FT 16..36

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FT Region /note= "tetanus toxoid P30 epitope"
FT 37..51
FT Region /note= "tetanus toxoid P2 epitope"
FT 52..160
FT Misc-difference 124 /note= "identical to residues 267-375 of human GDF-8"
FT /notes "Cys-124 may be substituted by Ser to avoid
FT disulfide bond formation"
FT Misc-difference 141..142
FT /note= "optionally replaced by Glu-Gly"
XX XX
PN W0200105820-A2.
XX XX
PD 25-JAN-2001.
XX XX
PF 20-JUL-2000; 2000WO-DK000413.
XX XX
PR 20-JUL-1999; 99DK-00001014.
PR 26-JUL-1999; 99US-0145275P.
XX XX
PA (WEBI-) M & B BIOTECH AS.
XX XX
PI Halkier T, Mouritsen S, Klysner S;
XX XX
WPI; 2001-112680/12.
XX XX
PT Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
PT through induction of anti-GDF-8 antibody production.
XX XX
PS Example 1; Page 107-108; 110pp; English.
XX XX
CC The present sequence is that of AutoVac construct GDF-8 ext, which
CC consists of the C-terminal 160 amino acids of human growth
CC differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36
CC substituted by the promiscuous tetanus toxin T-cell epitope P30 (see
CC AAB20144) and residues 37-51 substituted by tetanus toxin T-cell epitope
CC P2 (see AAB20143). It is an object of the invention to produce a
CC recombinant therapeutic vaccine that is capable of effecting down-
CC regulation of GDF-8 in order to increase the muscle growth rate of farm
CC animals. The vaccines (see AAB20145-53) are capable of breaking
CC auto tolerance against autologous GDF-8. They comprise the C-terminal
CC portion of human GDF-8 in which a portion of the native sequence is
CC replaced by a T-cell epitope such as P30, with minimal disturbance of the
CC authentic 3-dimensional structure of the protein. Nucleic acids encoding
CC the GDF-8 variants can be used for genetic immunisation of the animals.
CC Down-regulation of GDF-8 activity can increase muscle mass by up to at
CC least 45% in cattle, pigs and poultry used for meat production, reducing
CC the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure
XX XX
SQ Sequence 160 AA;
Query Match 100.0%; Score 74; DB 4; Length 160;
Best Local Similarity 100.0%; Pred. No. 1.3e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db 37 QYIKANSKFIGITEL 51
RESULT 166
AAY84425
ID AAY84425 standard; protein; 173 AA.
XX XX
AC AAY84425;
XX XX
DT 25-JUL-2000 (first entry)
XX XX
DE DNA encoding osteoprotegerin ligand/tetanus toxoid P30 epitope fusion.

```


XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption.
 XX Synthetic.
 OS Clostridium tetani.
 OS Mus musculus.
 XX Key Location/Qualifiers
 FT Peptide 1..14 /note= "His tag"
 FT Protein 15..144
 FT Peptide 145..159 /note= "residues 158-287 of murine OPGL"
 FT Protein 160..173 /note= "tetanus toxoid P2 epitope"
 FT Protein 160..173 /note= "residues 303-316 of murine OPGL"
 XX WO200015807-A1.
 PN
 XX 23-MAR-2000.
 PD
 XX 13-SEP-1999; 99WO-DK000481.
 PF
 XX 15-SEP-1998; 98DK-00001164.
 PR
 XX 02-OCT-1998; 98US-0102896P.
 PR
 PA (MEBI-) M & E BIOTECH AS.
 XX Halkier T, Haaning J;
 PI
 XX WPI; 2000-271444/23.
 DR N-PSDB; AAZ99972.
 XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 FT treat, prevent and ameliorate osteoporosis.
 FT
 XX Example; Page 99-100; 110pp; English.
 XX The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P2 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption
 XX Sequence 173 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 173;
 Best Local Similarity 100.0%; Pred. NO. 1.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 145 QYIKANSKFIGITEL 159
 RESULT 167
 AAY84424
 ID AAY84424 standard; protein; 182 AA.
 XX
 AC AAY84424;

XX 25-JUL-2000 (first entry)
 DT
 XX An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion.
 DE
 XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; ss.
 XX Synthetic.
 OS Clostridium tetani.
 OS Mus musculus.
 XX Key Location/Qualifiers
 FT Peptide 1..14 /note= "His tag"
 FT Protein 15..112 /note= "residues 158-255 of murine OPGL"
 FT Peptide 113..127 /note= "tetanus toxoid P2 epitope"
 FT Protein 128..182 /note= "residues 262-316 of murine OPGL"
 FT
 XX WO200015807-A1.
 PN
 XX 23-MAR-2000.
 PD
 XX 13-SEP-1999; 99WO-DK000481.
 PF
 XX 15-SEP-1998; 98DK-00001164.
 PR
 XX 02-OCT-1998; 98US-0102896P.
 PR
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Halkier T, Haaning J;
 PI
 XX WPI; 2000-271444/23.
 DR N-PSDB; AAZ99971.
 XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 FT treat, prevent and ameliorate osteoporosis.
 FT
 XX Example; Page 97-98; 110pp; English.
 XX The present sequence encodes a fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P2 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption
 XX Sequence 182 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 182;
 Best Local Similarity 100.0%; Pred. NO. 1.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 113 QYIKANSKFIGITEL 127
 RESULT 168

```

AAO30489
ID AAO30489 standard; protein; 194 AA.
XX
AC AAO30489;
XX
XX 22-SEP-2003 (first entry)
XX
XX Human TNFalpha variant, TNF34-P30-P2.
XX
XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX mutant; variant; tetanus toxoid; epitope.
XX
XX Homo sapiens.
XX Unidentified.
XX Chimeric.
XX
XX Key Location/Qualifiers
XX Region 1..109
XX /note= "Human TNF"
XX Region 110..130
XX /note= "Tetanus toxoid P30 epitope"
XX Region 131..145
XX /note= "Tetanus toxoid P2 epitope"
XX Region 146..194
XX /note= "Human TNF"
XX
XX WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDORGB B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 159-160; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein with
XX an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
XX illustrate the method of the invention
XX
XX Sequence 194 AA;
XX
XX Query Match 100.0%; Score 74; DB 6; Length 194;
XX Best Local Similarity 100.0%; Pred. No. 1.6e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX
XX Db 131 QYIKANSKFIGITEL 145
XX
XX RESULT 169

```

AA92665
 ID AAY92665 standard; peptide; 216 AA.
 AC AAY92665;
 XX 10-AUG-2000 (first entry)
 DT MUC-1 analogue containing foreign epitopes.
 DE Mucin repeat; MUC-1 analogue; vaccination; self-protein; cancer;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.
 XX Homo sapiens.
 OS
 FH Key Location/Qualifiers
 FT Peptide 61..75
 FT /label= P2
 FT Peptide 136..156
 FT /label= P30
 FT /note= "q"
 XX WO200020027-A2.
 PN 13-APR-2000.
 XX 05-OCT-1999; 99WO-DK000525.
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 DR Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 XX Example 4; Page; 220pp; English.
 XX This is an immunogenized MUC-1 analogue containing foreign epitopes P2
 CC and P30. Immunogenic analogues of MUC-1 and, e.g. human prostate specific
 CC membrane antigen (hPSM) can be used in the claimed method as an
 CC autovacine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms (see features table). 10 regions
 CC suitable for the insertion of foreign T helper epitopes were identified.
 CC The method is used for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (self-proteins), e.g. hPSM, heregulin 2 (Her2)
 CC and/or fibroblast growth factor 8b (FGF8b). The method comprises
 CC effecting simultaneous presentation by antigen producing cells (APCs) of
 CC the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human FGF8, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence does not appear in
 CC the specification. It was made using the mucin repeat sequence
 CC (AA92664), P2 and P30 (AA92625-26), which appear on pages 220, 213 and
 CC 214 respectively, of the specification
 XX Sequence 216 AA;
 SQ Query Match 100.0%; Score 74; DB 3; Length 216;
 Best Local Similarity 100.0%; Pred. No. 1.7e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 QYKANSKFIGITEL 15
 DB 61 QYKANSKFIGITEL 75
 RESULT 171
 AAB20152
 ID AAB20152 standard; protein; 254 AA.
 XX
 AC AAB20152;
 XX 30-APR-2001 (first entry)
 DT Growth differentiation factor 8 AutoVac construct GDF-8 dimer.
 DE Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX Key Location/Qualifiers
 FT Region 1..109
 FT /note= "109 C-terminal residues of human GDF-8"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 FT Region 110..124
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 125..145
 FT /note= "tetanus toxoid P30 epitope"
 FT Region 146..254
 FT /note= "109 C-terminal residues of human GDF-8"
 FT Misc-difference 235..236
 FT /note= "optionally replaced by Glu-Gly"
 XX WO200105820-A2.
 XX 25-JAN-2001.
 XX 20-JUL-2000; 2000WO-DK000413.
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Halkier T, Mouritsen S, Klysner S;
 PI WPI; 2001-112680/12.
 DR Increasing the muscle mass of animals used in meat production by down
 XX regulating growth differentiation factor 8 (GDF-8) activity in the animal
 XX through induction of anti-GDF-8 antibody production.
 XX Example 1; Page 105-106; 110pp; English.
 XX The present sequence is that of AutoVac construct GDF-8 dimer comprising
 CC 2 copies of the 109-amino acid C-terminal region of human growth
 CC differentiation factor 8 (GDF-8, see AAF20141) covalently connected
 CC through the P2 and P30 T-cell epitopes (see AAB20143-44) of tetanus
 CC toxin. It is an object of the invention to produce a recombinant
 CC therapeutic vaccine that is capable of effecting down-regulation of GDF-8
 CC in order to increase the muscle growth rate of farm animals. The vaccines
 CC (see AAB20145-53) are capable of breaking autotolerance against
 CC autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in
 CC which a portion of the native sequence is replaced by a T-cell epitope
 CC such as P30, with minimal disturbance of the authentic 3-dimensional
 CC structure of the protein. Nucleic acids encoding the GDF-8 variants can
 CC be used for genetic immunisation of the animals. Down-regulation of GDF-8

CC activity can increase muscle mass by up to at least 45% in cattle, pigs
 CC and poultry used for meat production, reducing the need for antibiotic
 CC feed-additives. Anti-GP8 vaccines can be used to treat human diseases
 CC such as cancer cachexia where muscle atrophy is pronounced and for
 CC patients suffering from acute and chronic heart failure
 XX
 SQ Sequence 254 AA;

Query Match 100.0%; Score 74; DB 4; Length 254;
 Best Local Similarity 100.0%; Pred. No. 2.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 110 QYIKANSKFIGITEL 124
 |||||

RESULT 172
 AAO30457
 ID AAO30457 standard; protein; 285 AA.

XX AAO30457;
 XX 22-SEP-2003 (first entry)
 XX hIL5-P30-P2-hIL5 (hIL5.34) fusion construct protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.

XX Homo sapiens.
 OS Unidentified.
 OS Chimeric.

XX Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.34 protein"
 XX

PN WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.

PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.

PA (VOLD/) VOLDORGB B.

PA (MOUR/) MOURITSEN S.

XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

PI WPI; 2003-449558/42.

DR N-PSDB; AAL61293.

XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 20; Page 109-110; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g. arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises

CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention

SQ Sequence 285 AA;

Query Match 100.0%; Score 74; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 156 QYIKANSKFIGITEL 170
 |||||

RESULT 173

AAO30458

ID AAO30458 standard; protein; 285 AA.

XX AAO30458;

XX 22-SEP-2003 (first entry)

XX hIL5-P2-P30-hIL5 (hIL5.35) fusion construct protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.

XX Homo sapiens.

OS Unidentified.

OS Chimeric.

XX Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.35 protein"
 XX

PN WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.

PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.

PA (VOLD/) VOLDORGB B.

PA (MOUR/) MOURITSEN S.

XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

PI WPI; 2003-449558/42.

DR N-PSDB; AAL61294.

XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 20; Page 112-113; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g. arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the

```

CC invention
XX Sequence 285 AA;
SQ
  Query Match      100.0%; Score 74; DB 6; Length 285;
  Best Local Similarity 100.0%; Pred. No. 2.4e-05;
  Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
    |||||
Db 135 QYIKANSKFIGITEL 149

RESULT 174
AAO30459
ID AAO30459 standard; protein; 287 AA.
XX
AC AAO30459;
XX
DT 22-SEP-2003 (first entry)
XX
DE hIL5.36 variant protein.
XX
KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
XX
OS Homo sapiens.
OS Unidentified.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 1..19
FT /note= "Human IL5 leader peptide"
FT Protein 20..287
FT /note= "Mature hIL5.36 protein"
FT Region 24..44
FT /note= "Tetanus toxoid P30 epitope"
FT Region 273..287
FT /note= "Tetanus toxoid P2 epitope"
XX
FN WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
PR 16-NOV-2001; 2001DK-00001702.
PR 16-NOV-2001; 2001US-0331575P.
XX
PA (PHAR-) PHARMEXA AS.
PA (KLYS-) KLYSNER S.
PA (NIEL/) NIELSEN F S.
PA (BRAT/) BRATT T.
PA (VOLD/) VOLDORGB B.
PA (MOUR/) MOURITSEN S.
XX
PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX
DR WPI; 2003-449558/42.
DR N-PSDB; AAL61295.
XX
PT New immunogenic analogue of a polymeric protein, useful for preparing a
PT composition for treating inflammatory diseases e.g. arthritis.
XX
PS Claim 20; Page 115-117; 196pp; English.
XX
CC The invention relates to immunogenic analogues of multimeric proteins
CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
CC analogues. The immunogenic analogue is useful for preparing a composition
CC for treating inflammatory diseases, e.g., arthritis. It is also used in
CC gene therapy. The present sequence is a fusion construct variant which

```

```

CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
CC This sequence is used to illustrate the method of the invention
XX
SQ Sequence 287 AA;
  Query Match      100.0%; Score 74; DB 6; Length 287;
  Best Local Similarity 100.0%; Pred. No. 2.4e-05;
  Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
    |||||
Db 273 QYIKANSKFIGITEL 287

RESULT 175
AAO30460
ID AAO30460 standard; protein; 287 AA.
XX
AC AAO30460;
XX
DT 22-SEP-2003 (first entry)
XX
DE hIL5.37 variant protein.
XX
KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
XX
OS Homo sapiens.
OS Unidentified.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 1..19
FT /note= "Human IL5 leader peptide"
FT Protein 20..287
FT /note= "Mature hIL5.37 protein"
FT Region 24..38
FT /note= "Tetanus toxoid P2 epitope"
FT Region 273..287
FT /note= "Tetanus toxoid P30 epitope"
XX
FN WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
PR 16-NOV-2001; 2001DK-00001702.
PR 16-NOV-2001; 2001US-0331575P.
XX
PA (PHAR-) PHARMEXA AS.
PA (KLYS-) KLYSNER S.
PA (NIEL/) NIELSEN F S.
PA (BRAT/) BRATT T.
PA (VOLD/) VOLDORGB B.
PA (MOUR/) MOURITSEN S.
XX
PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX
DR WPI; 2003-449558/42.
DR N-PSDB; AAL61295.
XX
PT New immunogenic analogue of a polymeric protein, useful for preparing a
PT composition for treating inflammatory diseases e.g. arthritis.
XX
PS Claim 20; Page 117-120; 196pp; English.
XX
CC The invention relates to immunogenic analogues of multimeric proteins
CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
CC analogues. The immunogenic analogue is useful for preparing a composition
CC for treating inflammatory diseases, e.g., arthritis. It is also used in
CC gene therapy. The present sequence is a fusion construct variant which

```

CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX

SQ Sequence 287 AA;

Query Match 100.0%; Score 74; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38

RESULT 176

ID AAY70278
 AC AAY70278 standard; protein; 350 AA.

XX AAY70278;

DT 12-SEP-2003 (revised)

DT 06-JUN-2000 (first entry)

XX Recombinant vaccine CDC/NIIIMALVAC-1.

KW Recombinant protein; CDC/NIIIMALVAC-1; multivalent; malaria; vaccine;
 KW T-cell epitope; tetanus toxoid; antigenic epitope; treatment;
 KW circumsporozoite protein; CSP; sporozoite surface protein-2; SSP-2;
 KW liver stage antigen-1; LSA-1; merozoite surface protein-1; MSP-1; MSP-2;
 KW apical membrane antigen-1; AMA-1; erythrocyte binding antigen-175;
 KW EBA-175; rhoptry associated protein-1; RAP-1; Gamete specific antigen;
 KW Pf22; antiparasitic; prevention; anti-CDC/NIIIMALVAC-1 antibody;
 KW honey bee.

XX Apis; sp.

OS Clostridium tetani.

OS Plasmodium falciparum.

OS Chimeric.

XX Key Location/Qualifiers

FT Peptide 1..22
 /label= Melittin signal peptide
 /note= "Derived from Honey bee"
 FT Protein 23..350
 /label= Mature CDC/NIIIMALVAC-1
 /note= "Recombinant multivalent malarial vaccine"

XX WO200011179-A1.

XX 02-MAR-2000.

XX 19-AUG-1999; 99WO-US018869.

XX 21-AUG-1998; 98US-0097703P.

XX (NAIM-) NAT INST IMMUNOLOGY.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Lal AA, Shi YP, Hasnain SE;

XX WPI; 2000-237654/20.

XX N-PSDB; AAZ51336.

XX Novel recombinant protein as vaccine for treating malarial infection
 PT comprises antigenic peptides obtained from different stages of plasmodium
 PT falciparum life cycle.

XX Claim 3; Page 43-44; 52pp; English.

XX The present sequence is that of recombinant protein CDC/NIIIMALVAC-1.

CC which is a multivalent, multistage malarial vaccine. The recombinant
 CC protein comprises, melittin signal peptide, (His)6 tag, T-cell epitope
 CC from tetanus toxoid and 21 antigenic epitopes from circumsporozoite
 CC protein (CSP), sporozoite surface protein-2 (SSP-2), liver stage antigen-
 CC 1 (LSA-1), merozoite surface protein-1 (MSP-1), MSP-2, apical membrane
 CC antigen-1 (AMA-1), erythrocyte binding antigen-175 (EBA-175), rhoptry
 CC associated protein-1 (RAP-1) and gamete specific antigen, Pf27. These
 CC epitopes were obtained at different stages of the life cycle of
 CC Plasmodium falciparum. CDC/NIIIMALVAC-1 vaccine has antiparasitic activity
 CC and can be used for treatment and prevention of malarial infections. Anti-
 CC CDC/NIIIMALVAC-1 antibodies can be used for detecting P. falciparum in
 CC biological samples. (Updated on 12-SEP-2003 to standardise OS field)
 XX

SQ Sequence 350 AA;

Query Match 100.0%; Score 74; DB 3; Length 350;
 Best Local Similarity 100.0%; Pred. No. 3e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 192 QYIKANSKFIGITEL 206

RESULT 177

AO30491

ID AAO30491 standard; protein; 514 AA.

XX AAO30491;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant (TNF_T2) protein.

KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.

XX Homo sapiens.

OS Unidentified.

OS Chimeric.

XX Key Location/Qualifiers

FT Region 2..158
 /note= "Human TNF"
 FT Region 159..161
 /note= "Tri-glycine linker"
 FT Region 162..182
 /note= "Tetanus toxoid P30 epitope"
 FT Region 183..339
 /note= "Human TNF"
 FT Region 340..342
 /note= "Tri-glycine linker"
 FT Region 343..357
 /note= "Tetanus toxoid P2 epitope"
 FT Region 358..514
 /note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

XX (KLYS/) KLYSNER S.

XX (NIEL/) NIELSEN P S.

XX (BRAT/) BRATT T.

XX (VOLD/) VOLDBOG B.

XX (MOUR/) MOURITSSEN S.

```

XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX XX
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61300.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX PT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 169-171; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein with
XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX CC epitopes. This sequence is used to illustrate the method of the invention
XX CC
XX CC Sequence 514 AA;
XX CC
Query Match 100.0%; Score 74; DB 6; Length 514;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 343 QYIKANSKFIGITEL 357

RESULT 178
AAO30490
ID AAO30490 standard; protein; 514 AA.
XX AC AAO30490;
XX XX
XX DT 22-SEP-2003 (first entry)
XX DE Human TNFalpha variant (TNF_T1) protein.
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX KW variant; tetanus toxoid; epitope; mutein.
XX OS Homo sapiens.
XX OS Unidentified.
XX OS Chimeric.
XX FH Key Location/Qualifiers
XX FT Region 2..158
XX FT /note= "Human TNF"
XX FT Region 159..161
XX FT /note= "Tri-glycine linker"
XX FT Region 162..176
XX FT /note= "Tetanus toxoid P2 epitope"
XX FT Region 177..333
XX FT /note= "Human TNF"
XX FT Region 334..336
XX FT /note= "Tri-glycine linker"
XX FT Region 337..357
XX FT /note= "Tetanus toxoid P30 epitope"
XX FT Region 358..514
XX FT /note= "Human TNF"
XX PN WO2003042244-A2.
XX XX
XX PD 22-MAY-2003.
XX XX
XX PF 15-NOV-2002; 2002WO-DK000764.
XX PF 16-NOV-2001; 2001DK-00001702.
XX PR 16-NOV-2001; 2001US-0331575P.
XX PR

```

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XX XX
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX XX
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61300.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX PT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 163-166; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein with
XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX CC epitopes. This sequence is used to illustrate the method of the invention
XX CC
XX CC Sequence 514 AA;
XX CC
Query Match 100.0%; Score 74; DB 6; Length 514;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db 162 QYIKANSKFIGITEL 176

RESULT 179
AAO30495
ID AAO30495 standard; protein; 514 AA.
XX AC AAO30495;
XX XX
XX DT 22-SEP-2003 (first entry)
XX DE Human TNFalpha variant, hTNFT_4.
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX KW variant; tetanus toxoid; epitope; mutein.
XX OS Homo sapiens.
XX OS Unidentified.
XX OS Chimeric.
XX FH Key Location/Qualifiers
XX FT Region 2..158
XX FT /note= "Human TNF"
XX FT Region 159..161
XX FT /note= "Tri-glycine linker"
XX FT Region 162..318
XX FT /note= "Human TNF"
XX FT Region 319..321
XX FT /note= "Tri-glycine linker"
XX FT Region 322..336
XX FT /note= "Tetanus toxoid P2 epitope"
XX FT Region 337..493
XX FT /note= "Human TNF"
XX FT Region 494..514
XX FT /note= "Tetanus toxoid P30 epitope"
XX PN WO2003042244-A2.

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XX PD 22-MAY-2003.
XX PF
XX PF 15-NOV-2002; 2002WO-DK000764.
XX PR
XX PR 16-NOV-2001; 2001DK-00001702.
XX PR 16-NOV-2001; 2001US-0331575P.
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61305.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX FT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 191-193; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein. The
XX CC variant comprises 3 hTNF sequences joined by glycine linkers and tetanus
XX CC toxoid P2 and P30 epitopes. This sequence is used to illustrate the
XX CC method of the invention
XX SQ Sequence 514 AA;
Query Match 100.0%; Score 74; DB 6; Length 514;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
322 QYIKANSKFIGITEL 336
RESULT 180
AAO30492
ID AAO30492 standard; protein; 517 AA.
XX AC
XX AC AAO30492;
XX DT 22-SEP-2003 (first entry)
XX DE Human TNFalpha variant protein #1.
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
KW variant; tetanus toxoid; epitope; muten.
XX OS Homo sapiens.
OS Unidentified.
OS Chimeric.
XX FH Key
XX FT Location/Qualifiers
FT Region 2..158
FT /note= "Human TNF"
FT Region 159..161
FT /note= "Tri-glycine linker"
FT Region 162..318
FT /note= "Human TNF"
FT Region 319..321
FT /note= "Tri-glycine linker"
FT FT

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FT Region 322..336
FT /note= "Tetanus toxoid P2 epitope"
FT Region 337..493
FT /note= "Human TNF"
FT Region 494..496
FT /note= "Tri-glycine linker"
FT Region 497..517
FT /note= "Tetanus toxoid P2 epitope"
XX WO2003042244-A2.
XX PD 22-MAY-2003.
XX PF 15-NOV-2002; 2002WO-DK000764.
XX PR 16-NOV-2001; 2001DK-00001702.
XX PR 16-NOV-2001; 2001US-0331575P.
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61302.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX FT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 175-177; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein with
XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX CC epitopes. This sequence is used to illustrate the method of the invention
XX SQ Sequence 517 AA;
Query Match 100.0%; Score 74; DB 6; Length 517;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
322 QYIKANSKFIGITEL 336
RESULT 181
ABR82481
ID ABR82481 standard; protein; 537 AA.
XX AC
XX AC ABR82481;
XX DT 20-NOV-2003 (first entry)
XX DE Truncated human CEA-TT P2 and P30 epitopes.
XX KW CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
XX OS Synthetic.
XX FH Key
XX FT Location/Qualifiers
FT Peptide 1..34
FT /note= "signal peptide"
FT FT

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FT Protein 35. .537
 FT /note= "mature protein"
 XX WO2003059379-A2.
 PN 24-JUL-2003.
 XX 17-JAN-2003; 2003WO-DK000031.
 XX 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX (PHAR-) PHARMEXA AS.
 PA Klysner S, Voldborg B;
 PI WPI; 2003-587260/55.
 XX N-PSDB; ACF35968.
 DR Inducing an immune response in humans against autologous carcinoembryonic
 DR antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX Disclosure; Page 134-137; 140pp; English.
 PS
 XX The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a truncated human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX
 SQ Sequence 537 AA;

Query Match 100.0%; Score 74; DB 7; Length 537;
 Best Local Similarity 100.0%; Pred. No. 4.7e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 415 QYIKANSKFIGITEL 429

RESULT 182
 AAP70345
 ID AAP70345 standard; protein; 573 AA.
 XX AAP70345;
 AC 25-MAR-2003 (revised)
 DT 22-APR-1991 (first entry)
 XX Portion of B fragment and all of the C fragment of tetanus toxin.
 DE TT; vaccine.
 KW Clostridium tetani.
 OS EP209281-A.
 PN 21-JAN-1987.
 PD 27-JUN-1986; 86EP-00305029.
 XX 28-JUN-1985; 85GB-00016442.
 PR (WELL) WELLCOME FOUND LTD.
 XX

XX Fairweathe NF;
 PI WPI; 1987-015999/03.
 DR N-PSDB; AAN70545.
 XX Cloned DNA sequence coding for tetanus toxin - or its fragments contg.
 PT epitope used to express antigens for vaccine prodn.
 XX Claim 4; Fig 1; 36pp; English.
 PS Gene product comprises a tetanus toxin fragment, which may be expressed
 XX in a transformed host, and used as an antigen in vaccine production,
 CC against the disease. (Updated on 25-MAR-2003 to correct PA field.)
 CC
 XX Sequence 573 AA;
 SQ

Query Match 100.0%; Score 74; DB 1; Length 573;
 Best Local Similarity 100.0%; Pred. No. 5.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 88 QYIKANSKFIGITEL 102

RESULT 183
 AAY92649
 ID AAY92649 standard; protein; 693 AA.
 XX AAY92649;
 AC 10-AUG-2000 (first entry)
 DT Mutant human PSM antigen splice variant construct, hPSM10.3.
 XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX Homo sapiens.
 OS Synthetic.
 XX

Key Location/Qualifiers
 FT Peptide 153..173
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 617..631
 FT /label= P2
 FT /note= "foreign epitope"

WO200020027-A2.
 PN 13-APR-2000.
 XX 05-OCT-1999; 99WO-DK000525.
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 DR Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 PS Example 1; Page; 220pp; English.
 XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 74; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. NO. 6.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 617 QYIKANSKFIGITEL 631

RESULT 184

AA92647
 ID AA92647 standard; protein; 693 AA.

AC AA92647;

DT 10-AUG-2000 (first entry)

DE Mutant human PSM antigen splice variant construct, hPSM'6.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

Key Location/Qualifiers
 FT Peptide 153..173
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 391..405
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX

PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AA92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 74; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. NO. 6.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 391 QYIKANSKFIGITEL 405

RESULT 185

ABR82479

ID ABR82479 standard; protein; 708 AA.

AC ABR82479;

DT 20-NOV-2003 (first entry)

DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; P2; P30; antigen.

XX Synthetic.

Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..708
 FT /note= "mature protein"

XX WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK000031.

XX 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klyener S, Voldborg B;

XX WPI; 2003-587260/55.
 DR N-PSDB; ACF35966.
 XX
 PT Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX
 PS Disclosure; Page 121-124; 140pp; English.
 XX
 CC The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX
 SQ Sequence 708 AA;
 Query Match 100.0%; Score 74; DB 7; Length 708;
 Best Local Similarity 100.0%; Pred. No. 6.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 538 QYIKANSKFIGITEL 552
 RESULT 186
 ABR82480
 ID ABR82480 standard; protein; 713 AA.
 AC ABR82480;
 XX
 DT 20-NOV-2003 (first entry)
 XX
 DE Modified human CEA-TT P2 and P30 epitopes.
 XX
 CC CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..713
 FT /note= "mature protein"
 XX
 PN WO2003059379-A2.
 XX
 PD 24-JUL-2003.
 XX
 PF 17-JAN-2003; 2003WO-DK000031.
 XX
 PR 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX
 PA (PHAR-) PHARMEXA AS.
 XX
 PI Klysner S, Voldborg B;
 XX
 DR WPI; 2003-587260/55.
 DR N-PSDB; ACF35967.
 XX
 PT Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a

PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX
 PS Disclosure; Page 128-131; 140pp; English.
 XX
 CC The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX
 SQ Sequence 713 AA;
 Query Match 100.0%; Score 74; DB 7; Length 713;
 Best Local Similarity 100.0%; Pred. No. 6.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 415 QYIKANSKFIGITEL 429
 RESULT 187
 ABR82478
 ID ABR82478 standard; protein; 717 AA.
 AC ABR82478;
 XX
 DT 20-NOV-2003 (first entry)
 XX
 DE Modified human CEA-TT P2 and P30 epitopes.
 XX
 CC CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..717
 FT /note= "mature protein"
 XX
 PN WO2003059379-A2.
 XX
 PD 24-JUL-2003.
 XX
 PF 17-JAN-2003; 2003WO-DK000031.
 XX
 PR 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX
 PA (PHAR-) PHARMEXA AS.
 XX
 PI Klysner S, Voldborg B;
 XX
 DR WPI; 2003-587260/55.
 DR N-PSDB; ACF35964.
 XX
 PT Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX
 PS Disclosure; Page 114-117; 140pp; English.
 XX
 CC The invention relates to inducing an immune response against autologous

Example 1; Page; 220pp; English.

PS XX AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification

SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

|||||

Db 305 QYIKANSKFIGITEL 319

RESULT 190

AAY92628

ID AAY92628 standard; protein; 750 AA.

AC AAY92628;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM6.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FH Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 448..462

FT /label= P2

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI 05-OCT-1999; 99WO-DK000525.

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide

PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing

CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

CC group derived from the PA and/or at least 1 B-cell group derived from the

CC cell-associated PA; and (2) at least 1 first T helper cell group which is

CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and

CC predicted CTL and B-cell epitopes of the respective PA and including at

CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human

CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

CC from the wild type human PSM (AAY92619), which appears on pages 184-187

CC of the specification

XX Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

|||||

Db 448 QYIKANSKFIGITEL 462

RESULT 191

AAY92631

ID AAY92631 standard; protein; 750 AA.

AC AAY92631;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.6.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FH Peptide 24..38

FT /label= P2

FT /note= "foreign epitope"

FT Peptide 443..463

FT /label= P30

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

```

XX 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
XX WPI; 2000-349917/30.
XX
XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
XX Example 1; Page; 220pp; English.
XX
XX AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
XX Sequence 750 AA;
XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX | | | | | | | | | | | | | | |
XX 24 QYIKANSKFIGITEL 38
XX
XX RESULT 192
XX AAY92645
XX ID AAY92645 standard; protein; 750 AA.
XX
XX AAY92645;
XX
XX 10-AUG-2000 (first entry)
XX
XX Mutant human prostate specific membrane antigen construct, hPSM8.3.
XX
XX Prostate specific membrane antigen; immunogenized construct; mutant;
XX vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX prostate cancer; cell-associated peptide antigen; foreign epitope.
XX
XX Homo sapiens.
XX Synthetic.
XX
XX Key Location/Qualifiers
XX Peptide 210..230
XX /label= P30
XX /note= "foreign epitope"
XX Peptide 606..620
XX /label= P2
XX

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FT /note= "foreign epitope"
XX
XX WO2000020027-A2.
XX
XX 13-APR-2000.
XX
XX 05-OCT-1999; 99WO-DK000525.
XX
XX 05-OCT-1998; 98DK-00001261.
XX 20-OCT-1998; 98US-0105011P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
XX WPI; 2000-349917/30.
XX
XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
XX Example 1; Page; 220pp; English.
XX
XX AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
XX Sequence 750 AA;
XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX | | | | | | | | | | | | | | |
XX 606 QYIKANSKFIGITEL 620
XX
XX Db
XX
XX RESULT 193
XX AAY92627
XX ID AAY92627 standard; protein; 750 AA.
XX
XX AAY92627;
XX
XX 10-AUG-2000 (first entry)
XX
XX Mutant human prostate specific membrane antigen construct, hPSM1.1.
XX
XX Prostate specific membrane antigen; immunogenized construct; mutant;
XX vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX prostate cancer; cell-associated peptide antigen; foreign epitope.
XX
XX Homo sapiens.
XX Synthetic.
XX

```

```

XX FH Key Location/Qualifiers
XX FT Peptide 17..31
XX FT /label= P2
XX FT /note= "foreign epitope"
XX FT Peptide 32..52
XX FT /label= P30
XX FT /note= "foreign epitope"
XX PN WO200020027-A2.
XX XX
XX PD 13-APR-2000.
XX XX
XX PF 05-OCT-1999; 99WO-DK000525.
XX PF 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX PA (MEBI-) M & E BIOTECH AS.
XX XX
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX XX
XX DR WPI; 2000-349917/30.
XX XX
XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PT antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX XX
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX Qy 1 QYIKANSKFIGITEL 15
XX Db 17 QYIKANSKFIGITEL 31
XX XX
XX RESULT 194
XX AAY92632
XX ID AAY92632 standard; protein; 750 AA.
XX AC AAY92632;
XX XT 10-AUG-2000 (first entry)
XX XX
XX DE Mutant human prostate specific membrane antigen construct, hPSM1.8.

```

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XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX OS Homo sapiens.
XX OS Synthetic.
XX FH Key Location/Qualifiers
XX FT Peptide 24..38
XX FT /label= P2
XX FT /note= "foreign epitope"
XX FT Peptide 607..627
XX FT /label= P30
XX FT /note= "foreign epitope"
XX XX
XX PN WO200020027-A2.
XX XX
XX PD 13-APR-2000.
XX XX
XX PF 05-OCT-1999; 99WO-DK000525.
XX PF 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX XX
XX PA (MEBI-) M & E BIOTECH AS.
XX XX
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX XX
XX DR WPI; 2000-349917/30.
XX XX
XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PT antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX XX
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX Qy 1 QYIKANSKFIGITEL 15
XX Db 24 QYIKANSKFIGITEL 38
XX XX
XX RESULT 195
XX AAY92638

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ID XX AAY92638 standard; protein; 750 AA.
AC XX AAY92638;
XX XX
DT XX 10-AUG-2000 (first entry)
XX XX
DE XX Mutant human prostate specific membrane antigen construct, hPSM3.1.
XX XX
KW Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX XX
OS Homo sapiens.
OS Synthetic.
XX XX
FH Key Location/Qualifiers
FT Peptide 21..41
FT /label= P30
FT /note= "foreign epitope"
FT Peptide 213..227
FT /label= P2
FT /note= "foreign epitope"
XX XX
PN WO200020027-A2.
XX XX
PD 13-APR-2000.
XX XX
PF 05-OCT-1999; 99WO-DK000525.
XX XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX XX
PA (MEBI-) M & E BIOTECH AS.
XX XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX XX
DR WPI; 2000-349917/30.
XX XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX XX
PS Example 1; Page; 220pp; English.
XX XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX XX
SQ Sequence 750 AA;
Query Match 100.0%; Score 74; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 6.8e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 213 QYIKANSKFIGITEL 227
RESULT 196
AAY92640
ID AAY92640 standard; protein; 750 AA.
XX XX
AC AAY92640;
XX XX
DT 10-AUG-2000 (first entry)
XX XX
DE Mutant human prostate specific membrane antigen construct, hPSM8.0.
XX XX
KW Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX XX
OS Homo sapiens.
OS Synthetic.
XX XX
FH Key Location/Qualifiers
FT Peptide 606..620
FT /label= P2
FT /note= "foreign epitope"
XX XX
PN WO200020027-A2.
XX XX
PD 13-APR-2000.
XX XX
PF 05-OCT-1999; 99WO-DK000525.
XX XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX XX
PA (MEBI-) M & E BIOTECH AS.
XX XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX XX
DR WPI; 2000-349917/30.
XX XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX XX
PS Example 1; Page; 220pp; English.
XX XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX XX
SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 606 QYIKANSKFIGITEL 620

RESULT 197

AAAY92630
 ID AAY92630 standard; protein; 750 AA.

XX AC AAY92630;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM10.1.
 XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.
 OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"

XX PN WO200020027-A2.

XX PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX DR WPI; 2000-349917/30.

XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 674 QYIKANSKFIGITEL 688

RESULT 198

AAAY92633
 ID AAY92633 standard; protein; 750 AA.

XX AC AAY92633;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.10.
 XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.
 OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 673..693
 FT /label= P30
 FT /note= "foreign epitope"

XX PN WO200020027-A2.

XX PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX DR WPI; 2000-349917/30.

XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 24 QYIKANSKFIGITEL 38
 RESULT 199
 AA92646
 ID AAY92646 standard; protein; 750 AA.
 AC AAY92646;
 XX
 XX 10-AUG-2000 (first entry)
 XX Mutant human prostate specific membrane antigen construct, hPSM10.3.
 DE
 XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX Homo sapiens.
 OS Synthetic.
 XX
 XX Key Location/Qualifiers
 FT Peptide 210..230
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"
 XX WO200020027-A2.
 PN
 XX 13-APR-2000.
 PD
 XX 05-OCT-1999; 99WO-DK000525.
 PF
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 DR
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX Example 1; Page: 220pp; English.
 PS
 XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 674 QYIKANSKFIGITEL 688
 RESULT 200
 AA92634
 ID AAY92634 standard; protein; 750 AA.
 AC AAY92634;
 XX
 XX 10-AUG-2000 (first entry)
 XX Mutant human prostate specific membrane antigen construct, hPSM1.2.
 DE
 XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX Homo sapiens.
 OS Synthetic.
 XX
 XX Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 87..107
 FT /label= P30
 FT /note= "foreign epitope"
 XX WO200020027-A2.
 PN
 XX 13-APR-2000.
 PD
 XX 05-OCT-1999; 99WO-DK000525.
 PF
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 DR
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane

XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

XX CC The immunogenic analogues of PSM can be used in the claimed method as an

XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

XX CC binding regions and cysteine residues involved in disulfide bonds are

XX CC preserved in the immunogenized forms. The method is used for inducing

XX CC immune responses against weakly immunogenic cell-associated peptide

XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

XX CC simultaneous presentation by antigen producing cells (APCs) of the

XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

XX CC group derived from the PA and/or at least 1 B-cell group derived from the

XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is

XX CC foreign to the animal. Analogues of human PSM, human Her2 and

XX CC human/murine FGF8b comprising a substantial part of all known and

XX CC predicted CTL and B-cell epitopes of the respective PA and including at

XX CC least one foreign T helper epitope are also claimed. The method is used

XX CC to treat prostate, prostate/breast or breast cancer when the PA is human

XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187

XX CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38

RESULT 201

AAY92635

ID AAY92635 standard; protein; 750 AA.

XX AC AAY92635;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.3.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers

XX FT Peptide 24..38

XX FT /label= P2

XX FT /note= "foreign epitope"

XX FT Peptide 210..230

XX FT /label= P30

XX FT /note= "foreign epitope"

XX PN WO200020027-A2.

XX PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX XX

PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX DR

XX CC Inducing immune responses to weakly immunogenic, tumor associated peptide

XX CC antigens for the treatment of breast and prostate cancer.

XX PS

XX CC Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane

XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

XX CC The immunogenic analogues of PSM can be used in the claimed method as an

XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

XX CC binding regions and cysteine residues involved in disulfide bonds are

XX CC preserved in the immunogenized forms. The method is used for inducing

XX CC immune responses against weakly immunogenic cell-associated peptide

XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

XX CC simultaneous presentation by antigen producing cells (APCs) of the

XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

XX CC group derived from the PA and/or at least 1 B-cell group derived from the

XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is

XX CC foreign to the animal. Analogues of human PSM, human Her2 and

XX CC human/murine FGF8b comprising a substantial part of all known and

XX CC predicted CTL and B-cell epitopes of the respective PA and including at

XX CC least one foreign T helper epitope are also claimed. The method is used

XX CC to treat prostate, prostate/breast or breast cancer when the PA is human

XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187

XX CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38

RESULT 202

AAY92643

ID AAY92643 standard; protein; 750 AA.

XX AC AAY92643;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.0.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers

XX FT Peptide 24..38

XX FT /label= P2

XX FT /note= "foreign epitope"

XX PN WO200020027-A2.

XX PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.
 XX (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38
 RESULT 203
 AAY92636
 ID AAY92636 standard; protein; 750 AA.
 AC AAY92636;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM1.5.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 301..321
 FT /label= P30
 FT /note= "foreign epitope"
 FT
 XX

PN WO200020027-A2.
 XX
 PD 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 DR Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 PT
 PT Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38
 RESULT 204
 AAY92641
 ID AAY92641 standard; protein; 750 AA.
 XX
 AC AAY92641;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM10.0.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers

```

FT Peptide 674..688
FT /label= P2
FT /note= "foreign epitope"
XX
PN W0200020027-A2.
XX
PD 13-APR-2000.
XX
PF 05-OCT-1999; 99WO-DK000525.
XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
DR WPI; 2000-349917/30.
XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
PS Example 1; Page; 220pp; English.
XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
SQ Sequence 750 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 6.8e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db | | | | | | | | | | | | | | | |
674 QYIKANSKFIGITEL 688

RESULT 205
AAY92644
ID AAY92644 standard; protein; 750 AA.
XX
AC AAY92644;
XX
XX 10-AUG-2000 (first entry)
XX
XX Mutant human prostate specific membrane antigen construct, hPSM6.3.
XX
XX Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX prostate cancer; cell-associated peptide antigen; foreign epitope.
XX

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OS Homo sapiens.
XX Synthetic.
XX
FH Key Location/Qualifiers
FT Peptide 210..230
FT /label= P30
FT /note= "foreign epitope"
FT Peptide 448..462
FT /label= P2
FT /note= "foreign epitope"
XX
PN W0200020027-A2.
XX
PD 13-APR-2000.
XX
PF 05-OCT-1999; 99WO-DK000525.
XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
DR WPI; 2000-349917/30.
XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
PS Example 1; Page; 220pp; English.
XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
SQ Sequence 750 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 6.8e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db | | | | | | | | | | | | | | | |
448 QYIKANSKFIGITEL 462

RESULT 206
ADL90427
ID ADL90427 standard; protein; 872 AA.
XX
AC ADL90427;
XX
XX 17-JUN-2004 (first entry)
XX

```

XX DE Clostridial neurotoxin amino acid sequence SEQ ID NO:145.
 XX DE single chain polypeptide; clostridial neurotoxin light chain;
 KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX OS Clostridium tetani.
 XX PN WO2004024909-A2.
 XX PD 25-MAR-2004.
 XX PF 12-SEP-2003; 2003WO-GB003824.
 XX PF 12-SEP-2002; 2002US-00241596.
 XX PR (HEAL-) HEALTH PROTECTION AGENCY.
 XX PA Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
 PI Wayne J;
 XX DR WPI; 2004-270039/25.
 XX DR N-PSDB; ADL90426.
 XX PT New single chain polypeptides comprising clostridial neurotoxin light and
 PT heavy chains, useful as positive controls for toxin assays, or for
 PT developing vaccines against clostridial toxin.
 XX SQ Claim 1; SEQ ID NO 145; 588pp; English.
 XX CC The present invention describes a single chain polypeptide comprising
 CC clostridial neurotoxin light and heavy chains. The single chain
 CC polypeptide comprises 2 domains: the first domain is a clostridial
 CC neurotoxin light chain, or its fragment or variant, which is capable of
 CC cleaving one or more vesicle or plasma membrane associated proteins
 CC essential to exocytosis; the second domain is a clostridial neurotoxin
 CC heavy chain H-N portion, or its fragment or variant, which is capable of
 CC translocating the polypeptide into a cell and/or increasing the
 CC solubility of the polypeptide compared to the solubility of the first
 CC domain on its own. The second domain lacks a functional C-terminal part
 CC of a clostridial neurotoxin heavy chain, designated H-C, which renders
 CC the polypeptide incapable of binding to cell surface receptors that are
 CC the natural cell surface receptors to which native clostridial neurotoxin
 CC binds. Also described is a nucleic acid molecule encoding the single
 CC chain polypeptide described above. The single chain polypeptide has
 CC antibacterial activity, and can be used in vaccines. The single chain
 CC polypeptides can be used as positive controls for toxin assays, as
 CC reagent components for the synthesis of therapeutic molecules, or for
 CC developing vaccines against clostridial toxin. The polypeptides are also
 CC useful as non-toxic standards for the assessment and development of in
 CC vitro assays for detection of functional botulinum or tetanus neurotoxins
 CC in foodstuffs or environmental samples. The present sequence is used in
 CC the exemplification of the present invention.
 XX SQ Sequence 872 AA;
 Query Match 100.0%; Score 74; DB 8; Length 872;
 Best Local Similarity 100.0%; Pred. No. 86-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 823 QYIKANSKFIGITEL 837
 RESULT 207
 ADL90085
 ID ADL90085 standard; protein; 875 AA.
 XX AC ADL90085;
 XX PR 12-SEP-2002; 2002US-00241596.
 XX XX

DT 17-JUN-2004 (first entry)
 XX Tetanus toxin protein, SEQ ID 25.
 DE Immune response; immunoglobulin; Ig; tetanus toxin.
 KW Unidentified.
 XX OS WO2004027049-A2.
 XX PN 01-APR-2004.
 XX PD 18-SEP-2003; 2003WO-US030188.
 XX PF 20-SEP-2002; 2002US-0412219P.
 XX PR 14-MAR-2003; 2003WO-US007995.
 XX XX (ASTR-) ASTRAL INC.
 XX PA Bot A, Wang L, Smith D, Phillips B;
 PI WPI; 2004-295415/27.
 XX DR Generating an immune response to an antigen, useful for generating
 XX desired T cell responses comprising administering an immunoglobulin having
 XX one peptide epitope of the antigen attached to the immunoglobulin.
 XX PS Disclosure; Fig 1J; 154pp; English.
 XX CC The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX SQ Sequence 875 AA;
 Query Match 100.0%; Score 74; DB 8; Length 875;
 Best Local Similarity 100.0%; Pred. No. 8.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 390 QYIKANSKFIGITEL 404
 RESULT 208
 ADL90425
 ID ADL90425 standard; protein; 879 AA.
 XX AC ADL90425;
 XX DT 17-JUN-2004 (first entry)
 XX DE Clostridial neurotoxin amino acid sequence SEQ ID NO:143.
 XX single chain polypeptide; clostridial neurotoxin light chain;
 KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX OS Clostridium tetani.
 XX PN WO2004024909-A2.
 XX PD 25-MAR-2004.
 XX PF 12-SEP-2003; 2003WO-GB003824.
 XX PR 12-SEP-2002; 2002US-00241596.
 XX XX

PA (HEAL-) HEALTH PROTECTION AGENCY.

XX Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
PI Wayne J;

XX WPI; 2004-270039/25.
DR N-PSDB; ADL90424.

XX New single chain polypeptides comprising clostridial neurotoxin light and
PT heavy chains, useful as positive controls for toxin assays, or for
PT developing vaccines against clostridial toxin.

XX Claim 1; SEQ ID NO 143; 588pp; English.

XX The present invention describes a single chain polypeptide comprising
CC clostridial neurotoxin light and heavy chains. The single chain
CC polypeptide comprises 2 domains: the first domain is a clostridial
CC neurotoxin light chain, or its fragment or variant, which is capable of
CC cleaving one or more vesicle or plasma membrane associated proteins
CC essential to exocytosis; the second domain is a clostridial neurotoxin
CC heavy chain H-N portion, or its fragment or variant, which is capable of
CC translocating the polypeptide into a cell and/or increasing the
CC solubility of the polypeptide compared to the solubility of the first
CC domain on its own. The second domain lacks a functional C-terminal part
CC of a clostridial neurotoxin heavy chain, designated H-C, which renders
CC the polypeptide incapable of binding to cell surface receptors that are
CC the natural cell surface receptors to which native clostridial neurotoxin
CC binds. Also described is a nucleic acid molecule encoding the single
CC chain polypeptide described above. The single chain polypeptide has
CC antibacterial activity, and can be used in vaccines. The single chain
CC polypeptides can be used as positive controls for toxin assays, as
CC reagent components for the synthesis of therapeutic molecules, or for
CC developing vaccines against clostridial toxin. The polypeptides are also
CC useful as non-toxic standards for the assessment and development of in
CC vitro assays for detection of functional botulinum or tetanus neurotoxins
CC in foodstuffs or environmental samples. The present sequence is used in
CC the exemplification of the present invention.

XX Sequence 879 AA;

Query Match 100.0%; Score 74; DB 8; Length 879;

Best Local Similarity 100.0%; Pred. No. 8.1e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 830 QYIKANSKFIGITEL 844

RESULT 209

ADL90429

ID ADL90429 standard; protein; 887 AA.

XX ADL90429;

XX 17-JUN-2004 (first entry)

XX Clostridial neurotoxin amino acid sequence SEQ ID NO:147.

XX single chain polypeptide; clostridial neurotoxin light chain;

XX clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;

XX antibacterial; vaccine; toxin assay; clostridial toxin; detection;

XX botulinum; tetanus.

XX Clostridium tetani.

XX WO2004024909-A2.

XX 25-MAR-2004.

XX 12-SEP-2003; 2003WO-GB003824.

XX 12-SEP-2002; 2002US-00241596.

XX

PA (HEAL-) HEALTH PROTECTION AGENCY.

XX Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
PI Wayne J;

XX WPI; 2004-270039/25.
DR N-PSDB; ADL90428.

XX New single chain polypeptides comprising clostridial neurotoxin light and
PT heavy chains, useful as positive controls for toxin assays, or for
PT developing vaccines against clostridial toxin.

XX Claim 1; SEQ ID NO 147; 588pp; English.

XX The present invention describes a single chain polypeptide comprising
CC clostridial neurotoxin light and heavy chains. The single chain
CC polypeptide comprises 2 domains: the first domain is a clostridial
CC neurotoxin light chain, or its fragment or variant, which is capable of
CC cleaving one or more vesicle or plasma membrane associated proteins
CC essential to exocytosis; the second domain is a clostridial neurotoxin
CC heavy chain H-N portion, or its fragment or variant, which is capable of
CC translocating the polypeptide into a cell and/or increasing the
CC solubility of the polypeptide compared to the solubility of the first
CC domain on its own. The second domain lacks a functional C-terminal part
CC of a clostridial neurotoxin heavy chain, designated H-C, which renders
CC the polypeptide incapable of binding to cell surface receptors that are
CC the natural cell surface receptors to which native clostridial neurotoxin
CC binds. Also described is a nucleic acid molecule encoding the single
CC chain polypeptide described above. The single chain polypeptide has
CC antibacterial activity, and can be used in vaccines. The single chain
CC polypeptides can be used as positive controls for toxin assays, as
CC reagent components for the synthesis of therapeutic molecules, or for
CC developing vaccines against clostridial toxin. The polypeptides are also
CC useful as non-toxic standards for the assessment and development of in
CC vitro assays for detection of functional botulinum or tetanus neurotoxins
CC in foodstuffs or environmental samples. The present sequence is used in
CC the exemplification of the present invention.

XX Sequence 887 AA;

Query Match 100.0%; Score 74; DB 8; Length 887;

Best Local Similarity 100.0%; Pred. No. 8.2e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 830 QYIKANSKFIGITEL 844

RESULT 210

AAB61169

ID AAB61169 standard; protein; 1315 AA.

XX AAB61169;

XX 02-APR-2001 (first entry)

XX Clostridium tetani TeNT.

XX Clostridium tetani; TeNT; tetanus toxin; antibacterial; vaccine;

XX TeNT fragment C; infection.

XX Clostridium tetani;

XX WO200100839-A1.

XX 04-JAN-2001.

XX 23-JUN-2000; 2000WO-GB002428.

XX 25-JUN-1999; 99GE-00014861.

(UNLO) IMPERIAL COLLEGE SCI TECHNOLOGY & MED.

Fairweather NF, Sinha K;

WPI; 2001-123014/13.

New polypeptide, useful for treating infections of Clostridium tetani, comprises tetanus toxin fragment with a mutation in a loop region,.

Disclosure; Page 39; 43pp; English.

The present sequence is given in a specification relating to a novel polypeptide comprising tetanus toxin (TeNT) fragment C or its immunogenic fragment, containing a mutation in a loop region. The mutation results in a reduction in the binding of TeNT fragment C or its immunogenic fragment to gangliosides and primary motoneurons, and/or a reduction in the ability of TeNT fragment C or its immunogenic fragment to undergo retrograde transport. The polypeptide is useful for treating, preventing and reducing the susceptibility to Clostridium tetani infection in a human or animal, and also for producing antibodies which recognise groups within TeNT polypeptides. Antibody produced against the polypeptide is also useful for treating Clostridium tetani infection

Sequence 1315 AA;

Query Match 100.0%; Score 74; DB 4; Length 1315;

Best Local Similarity 100.0%; Pred. No. 0.00013;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

Db 830 QYIKANSKFIGITEL 844

RESULT 211

ADL90423

ID ADL90423 standard; protein; 1315 AA.

AC ADL90423;

DT 17-JUN-2004 (first entry)

XX Clostridial neurotoxin amino acid sequence SEQ ID NO:141.

XX single chain polypeptide; clostridial neurotoxin light chain;

KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;

XW antibacterial; vaccine; toxin assay; clostridial toxin; detection;

KW botulinum; tetanus.

XX Clostridium tetani.

OS WO2004024909-A2.

PN 25-MAR-2004.

XX 12-SEP-2003; 2003WO-GB003824.

XX 12-SEP-2002; 2002US-00241596.

XX (HEAL-) HEALTH PROTECTION AGENCY.

XX Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;

PI Wayne J;

XX WPI; 2004-270039/25.

DR N-PSDB; ADL90422.

XX New single chain polypeptides comprising clostridial neurotoxin light and heavy chains, useful as positive controls for toxin assays, or for developing vaccines against clostridial toxin.

PS Disclosure; SEQ ID NO 141; 588pp; English.

CC The present invention describes a single chain polypeptide comprising clostridial neurotoxin light and heavy chains. The single chain polypeptide comprises 2 domains; the first domain is a clostridial neurotoxin light chain, or its fragment or variant, which is capable of cleaving one or more vesicle or plasma membrane associated proteins essential to exocytosis; the second domain is a clostridial neurotoxin heavy chain H-N portion, or its fragment or variant, which is capable of translocating the polypeptide into a cell and/or increasing the solubility of the polypeptide compared to the solubility of the first domain on its own. The second domain lacks a functional C-terminal part of a clostridial neurotoxin heavy chain, designated H-C, which renders the polypeptide incapable of binding to cell surface receptors that are the natural cell surface receptors to which native clostridial neurotoxin binds. Also described is a nucleic acid molecule encoding the single chain polypeptide described above. The single chain polypeptide has antibacterial activity, and can be used in vaccines. The single chain polypeptides can be used as positive controls for toxin assays, as reagent components for the synthesis of therapeutic molecules, or for developing vaccines against clostridial toxin. The polypeptides are also useful as non-toxic standards for the assessment and development of in vitro assays for detection of functional botulinum or tetanus neurotoxins in foodstuffs or environmental samples. The present sequence is used in the exemplification of the present invention.

XX SQ Sequence 1315 AA;

Query Match 100.0%; Score 74; DB 8; Length 1315;

Best Local Similarity 100.0%; Pred. No. 0.00013;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

Db 830 QYIKANSKFIGITEL 844

Search completed: January 26, 2005, 07:08:38

Job time : 102.333 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:09 ; Search time 18.0833 Seconds
(without alignments)
111.736 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSWFLRVPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79:*

1: PIR1:*

2: PIR2:*

3: PIR3:*

4: PIR4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	1315	1 BTCLTN	tentoxilysin (EC 3
2	62	55.4	1268	2 S33411	botulinum neurotoxin
3	61	54.5	366	2 S48110	neurotoxin type F
4	61	54.5	369	2 S48109	neurotoxin type F
5	61	54.5	1274	2 I40813	neurotoxin type F
6	61	54.5	1297	2 S3791	neurotoxin - Clost
7	59	52.7	1296	1 BTCLAB	botulinum neurotoxin
8	58	51.8	1291	1 I48940	botulinum neurotoxin
9	58	51.8	1291	2 I40631	non-proteolytic bo
10	56	50.0	367	2 S48106	neurotoxin type E
11	56	50.0	1251	2 JH0256	botulinum neurotoxin
12	56	50.0	1252	2 S21178	botulinum neurotoxin
13	56	50.0	1295	2 I40645	botulinum neurotoxin
14	52	46.4	449	2 S23158	nucleocapsid prote
15	52	46.4	464	1 MNVUM	nonstructural prot
16	52	46.4	467	1 MNVUM1	nonstructural prot
17	51	45.5	1196	2 JQ1467	toxin, nontoxic co
18	51	45.5	1196	2 S46430	botulinum neurotoxin
19	49	43.8	276	2 T33493	hypothetical prote
20	48	42.9	504	2 T47446	hypothetical prote
21	48	42.9	1285	2 S70582	botulinum neurotoxin
22	48	42.9	1291	2 A49777	botulinum neurotoxin
23	48	42.9	1291	2 S46431	botulinum neurotoxin
24	47.5	42.4	1276	2 S11455	botulinum neurotoxin
25	47	42.0	359	2 S87937	protein F14B6.6 [i
26	47	42.0	385	2 T20879	hypothetical prote
27	47	42.0	469	2 B37837	probable alpha-amy
28	46	41.1	322	2 T25966	hypothetical prote
29	46	41.1	442	2 I47074	gene CD5 protein -

ALIGNMENTS

RESULT 1

BTCLTN

tentoxilysin (EC 3.4.24.68) precursor - Clostridium tetani
N;Alternate names: tetanus neurotoxin
C;Species: Clostridium tetani
C;Date: 31-Mar-1988 #sequence revision 31-Mar-1988 #text change 09-Jul-2004
C;Accession: A25689; A25757; A25194; B25194; A60759; S69348; S03364
R;Eisel, U.; Jarausch, W.; Goretzki, K.; Henschen, A.; Engels, J.; Weller, U.; Hudel, M.; EMBO J. 5, 2495-2502, 1986
A;Title: Tetanus toxin: primary structure, expression in E. coli, and homology with bot
A;Reference number: A25689; MUID:87053814; PMID:3536478
A;Accession: A25689
A;Molecule type: DNA
A;Residues: 1-1315 <EIS>
A;Cross-references: UNIPROT:P04958; GB:X04436; NID:g40769; PIDN:CAA28033.1; PID:g40770
R;Fairweather, N.F.; Lyness, V.A.
Nucleic Acids Res. 14, 7805-7812, 1986
A;Title: The complete nucleotide sequence of tetanus toxin.
A;Reference number: A25757; MUID:87040747; PMID:3774547
A;Accession: A25757
A;Molecule type: DNA
A;Residues: 1-1315 <PAI>
A;Cross-references: GB:X06214; NID:g40773; PIDN:CAA29564.1; PID:g40774
A;Experimental source: strain CN3911
R;Fairweather, N.F.; Lyness, V.A.; Pickard, D.J.; Allen, G.; Thomson, R.O.
J. Bacteriol. 165, 21-27, 1986
A;Title: Cloning, nucleotide sequencing, and expression of tetanus toxin fragment C in
A;Reference number: A25194; MUID:86085672; PMID:3510187
A;Accession: A25194
A;Molecule type: DNA
A;Residues: 743-1315 <FA2>
A;Cross-references: GB:M12739; NID:g144920; PIDN:AAA23282.1; PID:g144921
A;Accession: B25194
A;Molecule type: protein
A;Residues: 865-894 <FA3>
R;Matsuda, M.; Lei, D.L.; Sugimoto, N.; Ozutsumi, K.; Okabe, T.
Infect. Immun. 57, 3588-3593, 1989
A;Title: Isolation, purification, and characterization of fragment B, the NH-2-terminal
A;Reference number: A60759; MUID:90035436; PMID:2478476
A;Accession: A60759
A;Molecule type: protein
A;Residues: 461-475 <MAT>
R;Demotz, S.; Lanzavecchia, L.; Eisel, U.; Niemann, H.; Widmann, C.; Corradin, G.
J. Immunol. 142, 394-402, 1989
A;Title: Delineation of several DR-restricted tetanus toxin T cell epitopes.
A;Reference number: JS0098; MUID:89093918; PMID:2463305
A;Contents: annotation: epitope region
R;Schiaivo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.
Nature 359, 832-835, 1992
A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteoly
A;Reference number: S27125; MUID:93063293; PMID:1331807
A;Contents: annotation

probable myb-like
unknown protein F1
progenitor toxin n
botulinum toxin n
hypothetical prote
hypothetical prote
conserved hypochet
enterochelin ester
spheroidene monoox
probable membrane
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote

30 46 41.1 496 2 T38197
46 41.1 753 2 C96668
46 41.1 1162 2 A47708
46 41.1 1162 2 I40817
33 45 40.2 528 2 T41362
34 45 40.2 886 2 T39081
35 45 40.2 886 2 A82470
36 44 39.3 209 2 AD0574
37 44 39.3 404 2 S04401
38 44 39.3 591 2 D64943
39 43 38.4 152 2 B99945
40 43 38.4 152 2 E85793
41 43 38.4 152 2 A90711
42 43 38.4 381 2 E85561
43 43 38.4 381 2 T20858
44 43 38.4 514 2 T20858
45 43 38.4 781 2 F83884

R;de Filippis, V.; Vangelista, L.; Schiavo, G.; Tonello, F.; Montecucco, C.
Eur. J. Biochem. 229, 61-69, 1995
A;Title: Structural studies on the zinc-endopeptidase light chain of tetanus neurotoxin.
A;Reference number: S69348; MUID:95262688; PMID:7744050
A;Accession: S69348

A;Molecule type: protein
A;Residues: 2-31 <DEF>
C;Comment: The source of this protein was an extrachromosomal plasmid.
C;Comment: The precursor is cleaved by endogenous proteinase activity to form light (fragment A) and heavy (fragment B) chains. The amino end of the heavy chain (fragment B) forms a disulfide bridge with the amino end of the light chain (fragment A). Fragment C binds to ganglioside GM1. This potent neurotoxin binds to peripheral neuronal synapses, is internalized by endocytosis, and inhibits neurotransmitter release by proteolytic cleavage of synaptic vesicle proteins.
C;Function:

A;Description: blocks neuroexcitotoxicity via hydrolysis of a Gln-Phe peptide bond in synaptobrevin.
C;Superfamily: tetanus toxin
C;Keywords: hydrolyase; metalloproteinase; neurotoxin; transmembrane protein; zinc
F;2-457/Product: tentoxylisin light chain (fragment A) #status predicted <TTL>
F;461-1315/Product: tentoxylisin heavy chain (fragment B.C) #status experimental <TTH>
F;461-864/Domain: channel forming (fragment B) #status predicted <TXB>
F;865-1315/Domain: ganglioside binding (fragment C) #status predicted <TXC>
F;233,237/Binding site: zinc (His) #status predicted
F;234/Active site: Glu #status predicted

Query Match 100.0%; Score 112; DB 1; Length 1315;
Best Local Similarity 100.0%; Pred. No. 4.7e-10; Mismatches 0; Indels 0; Gaps 0;
Matches 21; Conservative 0;

QY 1 FNNFTVSFWLRVPSASHLE 21

Db 947 FNNFTVSFWLRVPSASHLE 967

RESULT 2

S33411
Clostridium neurotoxin type F - Clostridium barati
C;Species: Clostridium barati
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
C;Accession: S33411; S31860
R;Thompson, D.E.; Hutson, R.A.; East, A.K.; Allaway, D.; Collins, M.D.; Richardson, P.T.
FEMS Microbiol. Lett. 108, 175-182, 1993
A;Title: Nucleotide sequence of the gene coding for Clostridium barati type F neurotoxin
A;Reference number: S33411; MUID:93252228; PMID:8486245
A;Accession: S33411
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1268 <THO>
A;Cross-references: UNIPROT:Q45851; EMBL:X68262; NID:G49138; PIDN:CAA48329.1; PID:G49139
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin

Query Match 55.4%; Score 62; DB 2; Length 1268;
Best Local Similarity 64.3%; Pred. No. 0.082; Mismatches 4; Indels 1; Gaps 0;
Matches 9; Conservative 4;

QY 1 FNNFTVSFWLRVPS 14

Db 922 YQNFSISFWVRIPK 935

RESULT 3

S48110
Clostridium neurotoxin type F - Clostridium botulinum (fragment)
C;Species: Clostridium botulinum
C;Date: 14-Jul-1995 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
C;Accession: S48110
R;Campbell, K.D.; Collins, M.D.; East, A.K.
J. Clin. Microbiol. 31, 2255-2262, 1993
A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms.
A;Reference number: S48103; MUID:94013372; PMID:8408542
A;Accession: S48110
A;Status: preliminary; translation not shown
A;Molecule type: DNA

A;Residues: 1-366 <CAM>
A;Cross-references: UNIPROT:Q57236; EMBL:X70821; NID:G407792; PIDN:CAA50152.1; PID:G407792
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin

Query Match 54.5%; Score 61; DB 2; Length 366;
Best Local Similarity 57.1%; Pred. No. 0.032; Mismatches 8; Conservative 5; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPS 14

Db 297 YQNFSISFWVRIPK 310

RESULT 4

S48109
Clostridium neurotoxin type F - Clostridium botulinum (fragment)
C;Species: Clostridium botulinum
C;Date: 12-Feb-1998 #sequence_revision 20-Feb-1998 #text_change 09-Jul-2004
C;Accession: S48109
R;Campbell, K.D.; Collins, M.D.; East, A.K.
J. Clin. Microbiol. 31, 2255-2262, 1993
A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms.
A;Reference number: S48103; MUID:94013372; PMID:8408542
A;Accession: S48109
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-369 <CAM>
A;Cross-references: UNIPROT:P30996; EMBL:X70820; NID:G407790; PIDN:CAA50151.1; PID:G407790
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
C;Superfamily: tetanus toxin

Query Match 54.5%; Score 61; DB 2; Length 369;
Best Local Similarity 57.1%; Pred. No. 0.032; Mismatches 8; Conservative 5; Indels 1; Gaps 0;

QY 1 FNNFTVSFWLRVPS 14

Db 297 YQNFSISFWVRIPK 310

RESULT 5

I40813
Clostridium neurotoxin type F - Clostridium botulinum
C;Species: Clostridium botulinum
C;Date: 16-Aug-1996 #sequence_revision 16-Aug-1996 #text_change 09-Jul-2004
C;Accession: I40813; S48108
R;East, A.K.; Richardson, P.T.; Allaway, D.; Collins, M.D.; Roberts, T.A.; Thompson, D.P.
FEMS Microbiol. Lett. 96, 225-230, 1992
A;Title: Sequence of the gene encoding type F neurotoxin of Clostridium botulinum.
A;Reference number: I40644
A;Accession: I40813
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: DNA
A;Residues: 1-1274 <RES>
A;Cross-references: UNIPROT:P30996; GB:M92906; NID:G44866; PIDN:AAA23263.1; PID:G44866
R;Campbell, K.D.; Collins, M.D.; East, A.K.
J. Clin. Microbiol. 31, 2255-2262, 1993
A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms.
A;Reference number: S48103; MUID:94013372; PMID:8408542
A;Accession: S48108
A;Status: preliminary; translation not shown
A;Molecule type: DNA
A;Residues: 634-1002 <CAM>
A;Cross-references: EMBL:X70816; NID:G407788; PIDN:CAA50147.1; PID:G407788
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin

Query Match 54.5%; Score 61; DB 2; Length 1274;
Best Local Similarity 57.1%; Pred. No. 0.12; Mismatches 8; Conservative 5; Indels 1; Gaps 0;

QY 1 FNNFTVSFWLRVPS 14

A:Accession: S69220
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-12 <FUJ>
A:Cross-references: EMBL:D67030; DDBJ:D50421; NID:g2160224
R:Betley, M.J.; Somers, E.; DasGupta, B.R.
Biochem. Biophys. Res. Commun. 162, 1388-1395, 1989
A:Title: Characterization of botulinum type A neurotoxin gene: delineation of the N-term
A:Reference number: A33401; MUID:89350959; PMID:2669749
A:Accession: A33401
A:Molecule type: DNA
A:Residues: 1-35 <BT>
A:Cross-references: GB:M27892; NID:g144880; PIDN:AAA23269.1; PID:g551776

A;Reference number: A48940; MUID:92384550; PMID:1514783

A;Status: preliminary
A:Molecule type: DNA
A;Residues: 634-994 <CAM>
A;Cross-references: EMBL:X70817; NID:g407782; PIDN:CAA50148.1.; PID:g407783
A;Experimental source: proteolytic type B strain NCTC 7273
R:Szabo, E.A.; Pemberton, J.M.; Desmarchelier, P.M.
submitted to the EMBL Data Library, April 1992
A;Description: Partial amino acid sequence of botulinum neurotoxin type B and comparison
A;Reference number: S21575
A;Accession: S21575
A:Molecule type: DNA
A;Residues: 36-217, 'G', 219-224, 'S', 226-246 <SA>
A;Cross-references: EMBL:Z11934; NID:g40383; PIDN:CAA77991.1.; PID:g40384
R:Kurazono, H.; Mochida, S.; Binz, T.; Eisel, U.; Quanz, M.; Grebenstein, O.; Wernars, R.
J. Biol. Chem. 267, 14721-14729, 1992
A;Title: Minimal essential domains specifying toxicity of the light chains of tetanus toxin
A;Reference number: A42871; MUID:92340509; PMID:1634516
A;Accession: A42871
A;Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A;Residues: 1-313, 'S', 315-451 <KUR>
A;Experimental source: strain Okra
A;Note: sequence extracted from NCBI backbone (NCBIP:109365)
R:DasGupta, B.R.; Datta, A.
Biochimie 70, 811-817, 1988
A;Title: Botulinum neurotoxin type B (strain 657): partial sequence and similarity with
A;Reference number: S07155; MUID:89000987; PMID:3139097
A;Accession: S07155
A:Molecule type: protein
A;Residues: 2-29, 'M', 31-45 <DAS>
A;Accession: S08562
A:Molecule type: protein
A;Residues: 442-463, 'R', 465-467 <DA2>
R:Schmidt, J.J.; Sathyanarayanan, V.; DasGupta, B.R.
Arch. Biochem. Biophys. 238, 544-548, 1985
A;Title: Partial amino acid sequences of botulinum neurotoxins types B and E.
A;Reference number: S07128; MUID:85197963; PMID:3888113
A;Accession: S07128
A;Status: preliminary
A:Molecule type: protein
A;Residues: 2-16 <SCH1>
A;Accession: S08573
A;Status: preliminary
A:Molecule type: protein
A;Residues: 2-17 <SCH2>
A;Accession: S08574
A;Status: preliminary
A:Molecule type: protein
A;Residues: 442-459 <SCH3>
R:Schivo, G.; Benfenati, F.; Poullain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.R.
Nature 359, 832-835, 1992
A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteolytic
A;Reference number: S27125; MUID:93063293; PMID:1331807
A;Contents: annotation
C;Comment: Botulinum neurotoxins inhibit neurotransmitter release from cholinergic synap
C;Genetics:
A;Gene: bont/b
C;Function:
C;Description: catalyzes hydrolysis of a Gln-Phe peptide bond in synaptobrevin 2
C;Superfamily: tetanus toxin
C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
F;2-441/Product: bontoxilysin B light chain #status experimental <LIGHT>
F;442-1291/Product: bontoxilysin B heavy chain #status experimental <HVY>
F;230,234/Binding site: zinc (His) #status predicted
F;231/Active site: Glu #status predicted

Query Match 51.8%; Score 58; DB 1; Length 1291;
Best Local Similarity 64.3%; Pred.No. 0.38;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNTVTSFWLRPEK 14
Db 923 FLDESFSFWIRPK 936
| : : | : : |
| : : | : : |

Best Local Similarity 53.8%; Pred. No. 0.21;
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVP 13
Db 297 YKNFSTFWVRIP 309

RESULT 11
JH0256
botulinum neurotoxin type E precursor - Clostridium butyricum
C;Species: Clostridium butyricum
C;Date: 30-Jun-1992 #sequence_revision 15-May-1998 #text_change 09-Jul-2004
R;Poulet, S.; Hauser, D.; Quanz, M.; Niemann, H.; Popoff, M.R.
Biochem. Biophys. Res. Commun. 183, 107-113, 1992
A;Title: Sequences of the botulinum neurotoxin E derived from Clostridium botulinum type
A;Reference number: JH0256; MUID:92181428; PMID:1543481
A;Accession: JH0256
A;Status: nucleic acid sequence not shown
A;Molecule type: DNA
A;Residues: 1-27, 'E', 29-1251 <POU>
A;Cross-references: UNIPROT:P30995; EMBL:X62088; NID:g40379
A;Experimental source: strains ATCC 43181 and ATCC 43755
R;Fuji, N.; Kimura, K.; Yashiki, T.; Indoh, T.; Murakami, T.; Tsuzuki, K.; Yokosawa, N.
J. Gen. Microbiol. 137, 519-525, 1991
A;Title: Cloning of a DNA fragment encoding the 5'-terminus of the botulinum type E toxin
A;Reference number: S16145; MUID:91237316; PMID:2033376
A;Accession: S16145
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-229, 'M', 231-252 <FUJ>
A;Cross-references: EMBL:X53180; NID:g40407; PIDN:CAA37321.1; PID:g40408
A;Experimental source: strain BL6340
C;Comment: The clostridial neurotoxins are toxins that inhibit neurotransmitter release
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin
F;412-426/Product: botulinum neurotoxin type E light chain #status predicted <LIG>
F;423-1251/Product: botulinum neurotoxin type E heavy chain #status predicted <HEA>
F;412-426/Disulfide bonds: #status predicted

Query Match 50.0%; Score 56; DB 2; Length 1251;
Best Local Similarity 53.8%; Pred. No. 0.79;
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVP 13
Db 912 YKNFSTFWVRIP 924

RESULT 12
S21178
botulinum neurotoxin type E precursor - Clostridium botulinum
C;Species: Clostridium botulinum
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 09-Jul-2004
C;Accession: S21178; S48107; JH0257; B35294; A60027; S18111
R;Whelan, S.M.; Elmore, M.J.; Bodsworth, N.J.; Atkinson, T.; Minton, N.P.
Eur. J. Biochem. 204, 657-667, 1992
A;Title: The complete amino acid sequence of the Clostridium botulinum type-E neurotoxin
A;Reference number: S21178; MUID:92174922; PMID:1541280
A;Accession: S21178
A;Molecule type: DNA
A;Residues: 1-1252 <WHE>
A;Cross-references: UNIPROT:Q00496; UNIPROT:Q45862; EMBL:X62683; NID:g40397; PIDN:CAA445
R;Campbell, K.D.; Collins, M.D.; East, A.K.
J. Clin. Microbiol. 31, 2255-2262, 1993
A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific id
A;Reference number: S48103; MUID:94013372; PMID:8408542
A;Accession: S48107
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 616-982 <CAM>

A;Cross-references: EMBL:X70815; NID:g407786; PIDN:CAA50146.1; PID:g407787
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
R;Poulet, S.; Hauser, D.; Quanz, M.; Niemann, H.; Popoff, M.R.
Biochem. Biophys. Res. Commun. 183, 107-113, 1992
A;Title: Sequences of the botulinum neurotoxin E derived from Clostridium botulinum type
A;Reference number: JH0256; MUID:92181428; PMID:1543481
A;Accession: JH0257
A;Status: nucleic acid sequence not shown
A;Molecule type: DNA
A;Residues: 1-176, 'R', 178-197, 'C', 199-339, 'R', 341-772, 'I', 774-962, 'FE', 965-966, 'R', 968-
A;Cross-references: EMBL:X62089; NID:g40393; PIDN:CAA43999.1; PID:g40394
A;Experimental source: strain Beluga
R;Binz, T.; Kurazono, H.; Wille, M.; Frevert, J.; Wernars, K.; Niemann, H.
J. Biol. Chem. 265, 9153-9158, 1990
A;Title: The complete sequence of botulinum neurotoxin type A and comparison with other
A;Reference number: A35294; MUID:90264400; PMID:2160960
A;Accession: B35294
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-176, 'R', 178-252 <BIN>
A;Experimental source: strain Beluga
R;Gimenez, J.A.; DasGupta, B.R.
Biochimie 72, 213-217, 1990
A;Title: Botulinum neurotoxin type E fragmented with endoproteinase Lys-C reveals the s
A;Reference number: A60027; MUID:90344918; PMID:2116911
A;Accession: A60027
A;Molecule type: protein
A;Residues: 420-427 <GIM>
A;Experimental source: strain Beluga
A;Note: this fragment was generated by proteolysis with Lys-C rather than with trypsin
C;Comment: The clostridial neurotoxins are highly potent protein toxins that inhibit ne
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin
F;412-426/Product: botulinum neurotoxin type E light chain #status predicted <LCH>
F;423-1253/Product: botulinum neurotoxin type E heavy chain #status predicted <HCH>
F;412-426/Disulfide bonds: #status predicted

Query Match 50.0%; Score 56; DB 2; Length 1252;
Best Local Similarity 53.8%; Pred. No. 0.79;
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVP 13
Db 912 YKNFSTFWVRIP 924

RESULT 13
I40645
botulinum neurotoxin type A - Clostridium botulinum
C;Species: Clostridium botulinum
C;Date: 12-Aug-1996 #sequence_revision 12-Aug-1996 #text_change 09-Jul-2004
C;Accession: I40645
R;Willems, A.; East, A.K.; Lawson, P.A.; Collins, M.D.
Res. Microbiol. 144, 547-556, 1993
A;Title: Sequence of the gene coding for the neurotoxin of Clostridium botulinum type A
A;Reference number: I40645; MUID:94143603; PMID:8310180
A;Accession: I40645
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: DNA
A;Residues: 1-1296 <RES>
A;Cross-references: UNIPROT:Q45894; EMBL:X73423; NID:g507070; PIDN:CAA51824.1; PID:g507
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin

Query Match 50.0%; Score 56; DB 2; Length 1296;
Best Local Similarity 50.0%; Pred. No. 0.82;
Matches 7; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
Db 938 YENFSTFWIKPK 951

A:Molecule type: DNA
A:Residues: 1-1285 <MOR>
A:Cross-references: EMBL:D38442; NID:g1374775; PIDN:BAA07477.1; PID:g1374776
C:Comment: The Clostridial neurotoxins are highly potent protein toxins that inhibit ne
a disulfide bond. The heavy chain mediates the binding of toxin to the presynaptic memb
C:Superfamily: tetanus toxin
C:Keywords: disulfide bond; neurotoxin; transmembrane protein
F:1-447/Product: botulinum neurotoxin type Dsa light chain #status predicted <MAT1>
F:448-1285/Product: botulinum neurotoxin type Dsa heavy chain #status predicted <MAT2>

Query Match 42.9%; Score 48; DB 2; Length 1285;
Best Local Similarity 42.9%; Pred. No. 17;
Matches 6; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
 :.:|::|||.:

Db 931 YESFSISFWIRINK 944

RESULT 22

A49777
C:Species: Clostridium botulinum - Clostridium botulinum (type C, strain c-st)
C>Date: 10-Mar-1994 #sequence_revision 07-Apr-1994 #text_change 09-Jul-2004
C:Accession: S11291; A35396; S22166; A49777
R:Hausger, D.; Eklund, M.W.; Kurazono, H.; Binz, T.; Niemann, H.; Gill, D.M.; Boquet, P.
Nucleic Acids Res. 18, 4924, 1990
A>Title: Nucleotide sequence of Clostridium botulinum C1 neurotoxin.
A:Reference number: S11291; UID:90370487; PMID:2204031
A:Accession: S11291
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-84,'P',86-1291 <HAU>
A:Cross-references: UNIPROT:Q93HT3; EMBL:X53751; NID:g14905; PIDN:CAA37780.1; PID:g1490
R:Kimura, K.; Fujii, N.; Tsuzuki, K.; Murakami, T.; Indo, T.; Yokosawa, N.; Takeshi, K.
Biochem. Biophys. Res. Commun. 171, 1304-1311, 1990
A>Title: The complete nucleotide sequence of the gene coding for botulinum type C-1 tox
A:Reference number: A35396; UID:91024998; PMID:2222445
A:Accession: A35396
A>Status: preliminary; not compared with conceptual translation
A:Molecule type: DNA
A:Residues: 1-669,'R',671-1291 <TS1>
R:TsuZuki, K.; Kimura, K.; Fujii, N.; Yokosawa, N.; Oguma, K.
submitted to the EMBL Data Library, December 1991
A>Description: Nucleotide sequence of the gene for one of the components of hemagglutinin
A:Reference number: S22163
A:Accession: S22166
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-1291 <TS2>
A:Cross-references: EMBL:X62389; NID:g558175; PIDN:CAA44263.1; PID:g40390
R:Kimura, K.; Fujii, N.; Tsuzuki, K.; Murakami, T.; Indo, T.; Yokosawa, N.; Oguma, K.
Appl. Environ. Microbiol. 57, 1168-1172, 1991
A>Title: Cloning of the structural gene for Clostridium botulinum type C-1 toxin and wh
A:Reference number: A49777; UID:91282468; PMID:2059039
A:Accession: A49777
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-607 <TS3>
A:Cross-references: GB:D90210
C:Superfamily: tetanus toxin
C:Keywords: neurotoxin

Query Match 42.9%; Score 48; DB 2; Length 1291;
Best Local Similarity 42.9%; Pred. No. 17;
Matches 6; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
 :.:|::|||.:

Db 935 YESFSISFWIRINK 948

RESULT 23

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:08 ; Search time 69.4167 Seconds
(without alignments)
174.063 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSFWLRVPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt 02:*

1: uniprot_sprot:*

2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	451	Q9LA13	Q9LA13 clostridium
2	112	100.0	1310	Q93N27	Q93N27 clostridium
3	112	100.0	1314	1	TETX CLOTE
4	62	55.4	1268	Q45851	Q45851 clostridium
5	61	54.5	366	2	Q79AH9
6	61	54.5	1274	1	EXF CLOBO
7	61	54.5	1278	2	Q57236
8	61	54.5	1296	1	BXG CLOBO
9	59	52.7	1295	1	EXA1 CLOBO
10	59	52.7	1296	2	AAW75961
11	59	52.7	1296	2	AAQ06331
12	58	51.8	361	2	Q45846
13	58	51.8	361	2	Q45848
14	58	51.8	441	2	Q9X708
15	58	51.8	1290	1	EXB CLOBO
16	58	51.8	1291	2	Q08077
17	58	51.8	1291	2	Q08GR96
18	58	51.8	1291	2	Q9ZAJ8
19	58	51.8	1291	2	Q933K0
20	58	51.8	1291	1	Q93G71
21	57	50.9	1051	1	VP2_AHSV6
22	56	50.0	367	2	Q45861
23	56	50.0	367	2	Q45862
24	56	50.0	1250	1	EXE CLOBO
25	56	50.0	1250	1	EXE CLOBO
26	56	50.0	1251	2	Q9K395
27	56	50.0	1252	2	Q8K2M3
28	56	50.0	1252	2	BAB6845
29	56	50.0	1255	2	Q9FAR6
30	56	50.0	1295	1	EXA2 CLOBO
31	55	49.1	1280	2	Q9ZAJ5

32 52 46.4 445 2 Q76D18 Q76D18 impatiens n
33 52 46.4 445 2 BAC99990 BAC99990 impatiens n
34 52 46.4 449 1 VNSS_INSVN Q01811 impatiens n
35 52 46.4 464 1 VNSS_TSWV1 P26002 tomato spot
36 52 46.4 466 2 Q8JXJ9 Q8JXJ9 tomato spot
37 52 46.4 466 2 Q8JXK0 Q8JXK0 tomato spot
38 52 46.4 467 1 VNSS_TSWVL P26003 tomato spot
39 52 46.4 467 2 Q37367 Q37367 tomato spot
40 52 46.4 467 2 Q37369 Q37369 tomato spot
41 52 46.4 467 2 Q8JVL0 Q8JVL0 tomato spot
42 52 46.4 467 2 Q8JXK2 Q8JXK2 tomato spot
43 52 46.4 467 2 Q8JXK4 Q8JXK4 tomato spot
44 51 45.5 467 2 Q88900 Q88900 tospovirus.
45 51 45.5 1196 1 BXCN_CLOBO P46081 clostridium

ALIGNMENTS

RESULT 1
Q9LA13 PRELIMINARY; PRT; 451 AA.
ID Q9LA13
AC Q9LA13;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Tetanus toxin (Fragment).
OS Clostridium tetani.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
ON NCBI_TaxID=1513;
RX [1]
RP SEQUENCE FROM N.A.
RC STRAIN=20886;
RA He H.J., Shi H.J., He Z.Y., Yuan Q.S., Wu X.F.;
RL Submitted (MAY-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF154828; AAF73267.1; -
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz_like.
FT NON_TER 1
SQ SEQUENCE 451 AA; 51823 MW; 69A8C5F030E6CD8E CRC64;

Query Match 100.0%; Score 112; DB 2; Length 451;
Best Local Similarity 100.0%; Pred. No. 8.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 83 FNNFTVSFWLRVPKVSASHLE 103
|||||
FNNFTVSFWLRVPKVSASHLE 21
FNNFTVSFWLRVPKVSASHLE 103

RESULT 2
Q93N27 PRELIMINARY; PRT; 1310 AA.
ID Q93N27
AC Q93N27;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Tetanus toxin (Fragment).
OS Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
ON NCBI_TaxID=1513;
RX [1]
RP SEQUENCE FROM N.A.
RA Shumin Z., Dianliang L.;
RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF389424; AAK72964.2; -
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:proteolysis and peptidolysis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.

DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; Peptidase M27.
 DR InterPro; IPR006025; Pept_M_Zn_BS.
 DR Pfam; PF01742; Peptidase M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR ProDom; PD001963; Botulinum; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
 FT NON_TER 1 1310 1310
 FT NON_TER 1310 1310
 SQ SEQUENCE 1310 AA; 150316 MW; 9EADD9C14418E450 CRC64;
 Query Match 100.0%; Score 112; DB 2; Length 1310;
 Best Local Similarity 100.0%; Pred. No. 2.6e-09;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 948 FNNFTVSFWLRVPKVSASHLE 968
 RESULT 3
 TETX_CLOTE STANDARD; PRT; 1314 AA.
 AC P04958;
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 01-OCT-2004 (Rel. 45, Last annotation update)
 DE Tetanus toxin precursor [EC 3.4.24.68] (tentoxylisin) [Contains:
 DE Tetanus toxin light chain (Tetanus toxin chain L); Tetanus toxin heavy
 DE chain (Tetanus toxin chain H)].
 DE Name: tetX; Ordered locus Names: ctp60;
 GS Clostridium tetani.
 OG Plasmid pE88, and Plasmid 75 Kbp.
 OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
 OC Clostridium.
 OX NCBI_TaxID=1513;
 RN [1]
 RN SEQUENCE FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=87053814; PubMed=3536478;
 RA Eisel U., Jarausch W., Goretzki K., Henschen A., Engels J., Weller U.,
 RA Hudel M., Habermann E., Nienknecht H.,
 RT "Tetanus toxin: primary structure, expression in E. coli, and homology
 RT with botulinum toxins.";
 RL EMBO J. 5:2495-2502 (1986).
 RN [2]
 RN SEQUENCE FROM N.A.
 RC STRAIN=CN3911; PLASMID=75 Kbp;
 RX MEDLINE=87040747; PubMed=3774547;
 RA Fairweather N.F., Lyness V.A.;
 RT "The complete nucleotide sequence of tetanus toxin.";
 RL Nucleic Acids Res. 14:7809-7812 (1986).
 RN [3]
 RN SEQUENCE FROM N.A.
 RC STRAIN=Massachusetts / E88; PLASMID=pE88;
 RX MEDLINE=22457253; PubMed=12552129; DOI=10.1073/pnas.0335853100;
 RA Bruggemann H., Baumer S., Fricke W.F., Wierze A., Liesegang H.,
 RA Decker I., Herzberg C., Martinez-Arias R., Merkl R., Henne A.,
 RA Gottschalk G.;
 RT "The genome sequence of Clostridium tetani, the causative agent of
 RT tetanus disease.";
 RL Proc. Natl. Acad. Sci. U.S.A. 100:1316-1321 (2003).
 RN [4]
 RN SEQUENCE OF 742-1314 FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=86085672; PubMed=3510187;
 RA Fairweather N.F., Lyness V.A., Pickard D.J., Allen G., Thomson R.O.;
 RT "Cloning, nucleotide sequencing, and expression of tetanus toxin
 RT fragment C in Escherichia coli.";
 RL J. Bacteriol. 165:21-27 (1986).
 RN [5]
 RN PARTIAL SEQUENCE, AND DISULFIDE BONDS.
 RP MEDLINE=90201034; PubMed=2108021;

RA Krieglstein K., Henschen A., Weller U., Habermann E.;
 RT "Arrangement of disulfide bridges and positions of sulfhydryl groups
 RT in tetanus toxin.";
 RL Eur. J. Biochem. 188:39-45 (1990).
 RN [6]
 RN PARTIAL SEQUENCE.
 RX MEDLINE=92037649; PubMed=1935979;
 RA Krieglstein K.G., Henschen A.H., Weller U., Habermann E.;
 RT "Limited proteolysis of tetanus toxin. Relation to activity and
 RT identification of cleavage sites.";
 RL Eur. J. Biochem. 202:41-51 (1991).
 RN [7]
 RN IDENTIFICATION AS ZINC-PROTEASE.
 RX MEDLINE=93010948; PubMed=1396558;
 RA Schiavo G., Poullain B., Rossetto O., Benfenati F., Tauc L.,
 RA Montecucco C.;
 RT "Tetanus toxin is a zinc protein and its inhibition of
 RT neurotransmitter release and protease activity depend on zinc.";
 RL EMBO J. 11:3577-3583 (1992).
 RN [8]
 RN IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poullain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 RT proteolytic cleavage of synaptobrevin.";
 RL Nature 359:832-835 (1992).
 RN [9]
 RN X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF 874-1314.
 RX MEDLINE=97475217; PubMed=9334741;
 RA Umland T.C., Wingert L.M., Swaminathan S., Furey W.F., Schmidt J.J.,
 RA Sax M.;
 RT "Structure of the receptor binding fragment HC of tetanus
 RT neurotoxin.";
 RL Nat. Struct. Biol. 4:788-792 (1997).
 CC [1]- FUNCTION: Tetanus toxin acts by inhibiting neurotransmitter
 CC release. It binds to peripheral neuronal synapses, is internalized
 CC and moves by retrograde transport up the axon into the spinal cord
 CC where it can move between postsynaptic and presynaptic neurons. It
 CC inhibits neurotransmitter release by acting as a zinc
 CC endopeptidase that catalyzes the hydrolysis of the 76-Gln-Phe-77
 CC bond of synaptobrevin-2.
 CC [1]- CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-Phe-77 bond in
 CC synaptobrevin 2.
 CC [1]- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC [1]- SUBUNIT: The precursor polypeptide is subsequently cleaved to
 CC yield subchains L and H. These remain linked by a disulfide bridge
 CC and are non-toxic after separation.
 CC [1]- MISCELLANEOUS: The C-terminus of the heavy chain binds to
 CC ganglioside receptors.
 CC [1]- SIMILARITY: Belongs to peptidase family M27.
 CC
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 CC
 CC EMBL; X04436; CAA28033.1; -
 CC EMBL; X06214; CAA29564.1; -
 CC EMBL; AF528097; AAO37454.1; -
 CC EMBL; M12739; AAA23282.1; -
 CC PIR; A25689; BTCLTN.
 CC PDB; 1A8D; X-ray; @=863-1314.
 CC PDB; 1AF9; X-ray; @=863-1314.
 CC PDB; 1D0H; X-ray; A=846-1314.
 CC PDB; 1DFQ; X-ray; A=871-1314.
 CC PDB; 1DIW; X-ray; A=874-1314.
 CC PDB; 1DLL; X-ray; A=874-1314.
 CC PDB; 1FV2; X-ray; A=843-1314.
 CC PDB; 1FV3; X-ray; A/B=843-1314.

DR MEROPS; M27.001; --
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase_M27.
DR InterPro; IPR006025; Pept_M_Zn_BS.
DR Pfam; PF01742; Peptidase_M27; 1.
DR PRINTS; PR00760; BONTOTOXILYSIN.
DR PRODOM; PD001963; Bontotoxylisin; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; 1.
KW 3D-structure; Complete proteome; Direct protein sequencing; Hydrolase;
KW Metalloprotease; Neurotoxin; Plasmid; Transmembrane; Zinc.
FT INIT_MET 0
FT CHAIN 1 456 Tetanus toxin light chain.
FT CHAIN 457 1314 Tetanus toxin heavy chain.
FT METAL 232 232 Zinc (catalytic) (By similarity).
FT ACT_SITE 233 233 Zinc (catalytic).
FT METAL 236 236 Zinc (catalytic) (By similarity).
FT TRANSMEM 226 246 Potential.
FT TRANSMEM 669 689 Potential.
FT DISULFID 438 466 Interchain.
FT DISULFID 1076 1092 Interchain.
FT HELIX 876 882
FT TURN 883 883
FT TURN 884 891
FT TURN 892 893
FT STRAND 894 897
FT STRAND 904 907
FT TURN 909 910
FT STRAND 912 915
FT STRAND 920 925
FT TURN 928 929
FT STRAND 932 935
FT STRAND 938 940
FT HELIX 941 946
FT TURN 949 956
FT STRAND 962 968
FT HELIX 969 970
FT TURN 972 977
FT STRAND 980 981
FT STRAND 983 985
FT STRAND 987 995
FT TURN 996 997
FT STRAND 998 1004
FT TURN 1006 1007
FT STRAND 1010 1016
FT STRAND 1020 1020
FT TURN 1021 1022
FT STRAND 1031 1037
FT TURN 1039 1040
FT STRAND 1042 1047
FT TURN 1048 1049
FT STRAND 1050 1056
FT TURN 1058 1059
FT STRAND 1068 1074
FT TURN 1079 1080
FT STRAND 1082 1091
FT HELIX 1097 1105
FT TURN 1106 1107
FT STRAND 1112 1112
FT STRAND 1114 1114
FT TURN 1116 1117
FT STRAND 1120 1120
FT STRAND 1122 1122
FT TURN 1123 1124
FT STRAND 1127 1131
FT STRAND 1132 1134
FT TURN 1135 1136
FT STRAND 1137 1141
FT TURN 1144 1145
FT STRAND 1148 1152
FT STRAND 1155 1158
FT TURN 1159 1162
FT STRAND 1163 1166

FT STRAND 1173 1178
FT TURN 1184 1185
FT STRAND 1188 1188
Query Match 100.0%; Score 112; DB 1; Length 1314;
Best Local Similarity 100.0%; Pred. No. 2.6e-09;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVFKVSASHLE 21
Db 946 FNNFTVSFWLRVFKVSASHLE 966
RESULT 4
Q45851 PRELIMINARY; PRT; 1268 AA.
AC Q45851
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neurotoxin type F.
GN Name=bont /F;
OS Clostridium baratii.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1561;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93252228; PubMed=8486245;
RA Thompson D.E., Hutson R.A., East A.K., Allaway D., Collins M.D.,
RA Richardson P.T.;
RT "Nucleotide sequence of the gene coding for Clostridium baratii type F
neurotoxin; comparison with other clostridial neurotoxins";
RL FEMS Microbiol. Lett. 108:175-182(1993).
DR EMBL; X68262; CA448329.1; --
DR PIR; S33411; S33411.
DR HSSP; Q45894; 1E1H.
DR MEROPS; M27.002; --
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase_M27.
DR InterPro; IPR006025; Pept_M_Zn_BS.
DR Pfam; PF01742; Peptidase_M27; 1.
DR PRINTS; PR00760; BONTOTOXILYSIN.
DR PRODOM; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1268 AA; 145512 MW; 963040091AC15ED2 CRC64;
Query Match 55.4%; Score 62; DB 2; Length 1268;
Best Local Similarity 64.3%; Pred. No. 0.48;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVFK 14
Db 922 YQNFSVFWVRPK 935
RESULT 5
Q79AH9 PRELIMINARY; PRT; 366 AA.
AC Q79AH9
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Botulinum neurotoxin type F (fragment).
GN Name=BoNT/F;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;

```

CC Clostridium.
OX NCBI_TaxID=1491;
EN [1]:::|:|:|:|
RP SEQUENCE FROM N.A.
RX STRAIN=type F;
RC MEDLINE=94013372; PubMed=8408542;
RA Campbell K., East A.K., Collins M.D.;
RT "Gene probes for identification of the botulinum neurotoxin gene and
RT specific identification of neurotoxin types B, E, and F.";
RL J. Clin. Microbiol. 31:2255-2262(1993).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=type F;
RA Campbell K.D.;
RL Submitted (JAN-1993) to the EMBL/GenBank/DBJ databases.
DR EMBL; X70821; CAA50152.1; -
DR GO; GO:0009405; P:pathogenesis; IEA.
DR InterPro; IPR008985; ConA_like_1ec_g1.
KW Neurotoxin.
FT NON TER
FT NON TER
SQ SEQUENCE 366 AA; 43136 MW; 45A132B235D7E640 CRC64;

Query Match 54.5%; Score 61; DB 2; Length 366;
Best Local Similarity 57.1%; Pred. No. 0.19;
Matches 8; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
Db 297 YQNFSISFWVRIPK 310
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RESULT 6
BXF_CLOBO STANDARD; PRT; 1274 AA.
ID EBF_CLOBO
AC P30996;
DT 01-JUL-1993 (Rel. 26, Created)
DT 01-JUL-1993 (Rel. 26, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Botulinum neurotoxin type F precursor (EC 3.4.24.69) (BoNT/F)
DE (Bontoxilsin F).
GN NamesBoTF;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
[1]
RN SEQUENCE FROM N.A.
RC STRAIN=type F / ATCC 23387;
RX MEDLINE=93012902; PubMed=1398040;
RA East A.K., Richardson P.T., Allaway D., Collins M.D., Roberts T.A.,
RA Thompson D.E.;
RT "Sequence of the gene encoding type F neurotoxin of Clostridium
RT botulinum.";
RL FEMS Microbiol. Lett. 75:225-230(1992).
RN [2]
RP SEQUENCE OF 1-64 FROM N.A.
RC STRAIN=type F / Hobbs FT10;
RC MEDLINE=94297488; PubMed=7764998;
RA East A.K., Collins M.D.;
RT "Conserved structure of genes encoding components of botulinum
RT neurotoxin complex M and the sequence of the gene coding for the
RT nontoxic component in nonproteolytic Clostridium botulinum type F.";
RL Curr. Microbiol. 29:69-77(1994).
RN [3]
RP SEQUENCE OF 634-1002 FROM N.A.
RX MEDLINE=94013372; PubMed=8408542;
RA Campbell K., East A.K., Collins M.D.;
RT "Gene probes for identification of the botulinum neurotoxin gene and
RT specific identification of neurotoxin types B, E, and F.";
RL J. Clin. Microbiol. 31:2255-2262(1993).
RN [4]
RP IDENTIFICATION OF SUBSTRATE.

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RX MEDLINE=94230352; PubMed=8175689;
RA Yasasaki S., Baumeister A., Binz T., Blasi J., Link E., Cornille F.,
RA Roques B., Fykse E.M., Suedhof T.C., Jahn R., Niemann H.;
RT "Cleavage of members of the synaptobrevin/VAMP family by types D and F
RT botulinum neurotoxins and tetanus toxin.";
RL J. Biol. Chem. 269:12764-12772(1994).
CC -!- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
CC release. It binds to peripheral neuronal synapses, is internalized
CC and moves by retrograde transport up the axon into the spinal cord
CC where it can move between postsynaptic and presynaptic neurons. It
CC inhibits neurotransmitter release by acting as a zinc
CC endopeptidase that catalyzes the hydrolysis of the 58-Gln--Lys-59
CC bond of synaptobrevins-1 and -2.
CC -!- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
CC detected action on small molecule substrates.
CC -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity). (L) and a
CC -!- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
CC heavy chain (H). The light chain has the pharmacological activity,
CC formation and toxin binding, respectively.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- MISCELLANEOUS: There are seven antigenically distinct forms of
CC botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
CC -!- SIMILARITY: Belongs to peptidase family M27.
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CC EMBL; M92906; AAA23263.1; -
CC EMBL; S73676; AAC60475.1; -
CC EMBL; X70820; CAA50151.1; -
CC EMBL; X70816; CAA50147.1; -
CC PIR; I40813; I40813.
CC PIR; S48109; S48109.
CC HSSP; Q45894; 1E1H.
CC MEROPS; M27.002; -.
CC InterPro; IPR008985; ConA_like_1ec_g1.
CC InterPro; IPR011065; Kunitz_like.
CC InterPro; IPR003955; Peptidase_M27.
CC InterPro; IPR006025; Pept_M_Zn_BS.
CC Pfam; PF01742; Peptidase_M27; 1.
CC PRINTS; PR00760; BONTOXILYSIN.
CC ProDom; PD001963; Bontoxilysin; 1.
CC PROSITE; PS00142; ZINC_PROTEASE; 1.
KW Hydrolase; Metalloprotease; Neurotoxin; Transmembrane; Zinc.
FT CHAIN 1 436
FT METAL 437 1274
FT METAL 227 227
FT ACT_SITE 228 228
FT METAL 231 231
FT DISULFID 429 445
SQ SEQUENCE 1274 AA; 146709 MW; 5B99756A7438B921 CRC64;

Query Match 54.5%; Score 61; DB 1; Length 1274;
Best Local Similarity 57.1%; Pred. No. 0.7;
Matches 8; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
Db 930 YQNFSISFWVRIPK 943
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RESULT 7
Q57236 PRELIMINARY; PRT; 1278 AA.
ID Q57236; Q45863;
AC Q57236; Q45863;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)

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RA Atkinson T., Melling J., Minton N.P.;
 RT "the complete amino acid sequence of the Clostridium botulinum type A
 RT neurotoxin, deduced by nucleotide sequence analysis of the encoding
 RT gene."; Eur. J. Biochem. 189:73-81(1990).
 RL [2]
 RN
 RP
 RC SEQUENCE FROM N.A.
 RX STRAIN=Type A / 62A;
 RA MEDLINE=50264400; PubMed=2160960;
 RA Binz B., Kuarazono H., Wille M., Frevent J., Wernars K., Niemann H.;
 RT "the complete sequence of botulinum neurotoxin type A and comparison
 RT with other clostridial neurotoxins."; J. Biol. Chem. 265:9153-9158(1990).
 RL [3]
 RN
 RP
 RC SEQUENCE OF 1-65 FROM N.A.
 RX STRAIN=Type A / 62A;
 RA MEDLINE=97016817; PubMed=8863443;
 RA East A.K., Bhandari M., Stacey J.M., Campbell K.D., Collins M.D.;
 RT "Organization and phylogenetic interrelationships of genes encoding
 RT components of the botulinum toxin complex in proteolytic Clostridium
 RT botulinum types A, B, and F: evidence of chimeric sequences in the
 RT gene encoding the nontoxic nonhemagglutinin component."; Int. J. Syst. Bacteriol. 46:1103-1112(1996).
 RL [4]
 RN
 RP
 RC SEQUENCE OF 1-34 FROM N.A.
 RX STRAIN=Type A / Hall;
 RA MEDLINE=89350959; PubMed=2669749;
 RA Batley M.J., Somers E., Dasgupta B.R.;
 RT "Characterization of botulinum type A neurotoxin gene: delineation of
 RT the N-terminal encoding region."; Biochem. Biophys. Res. Commun. 162:1388-1395(1989).
 RL [5]
 RN
 RP
 RC SEQUENCE OF 1-18 FROM N.A.
 RX STRAIN=Type A / NTH;
 RA MEDLINE=96056783; PubMed=8521962;
 RA Fujita R., Fujinaga Y., Inoue K., Nakajima H., Kumon H., Oguma K.;
 RT "Molecular characterization of two forms of nontoxic-nonhemagglutinin
 RT components of Clostridium botulinum type A progenitor toxins."; FEBS Lett. 376:41-44(1995).
 RL [6]
 RN
 RP
 RC SEQUENCE OF 1-16.
 RX MEDLINE=84178501; PubMed=6370252;
 RA Schmidt J.J., Sarthyoorthy V., Dasgupta B.R.;
 RT "Partial amino acid sequence of the heavy and light chains of
 RT botulinum neurotoxin type A."; Biochem. Biophys. Res. Commun. 119:900-904(1984).
 RL [7]
 RN
 RP
 RC SEQUENCE OF 1-46.
 RX Dasgupta B.R., Foley J., Niece R.;
 RA "Partial sequence of the light chain of botulinum neurotoxin type A."; Biochemistry 26:4162-4162(1987).
 RL [8]
 RN
 RP
 RC SEQUENCE OF 1-5 AND 444-456.
 RX MEDLINE=91120847; PubMed=2126206;
 RA Dasgupta B.R., Dekleva M.L.;
 RT "Botulinum neurotoxin type A: sequence of amino acids at the N-
 RT terminus and around the nicking site."; Biochimie 72:661-664(1990).
 RL [9]
 RN
 RP
 RC SEQUENCE OF 448-464 AND 872-895.
 RX MEDLINE=89024662; PubMed=3178218;
 RA Sathymoorthy V., Dasgupta B.R., Foley J., Niece R.L.;
 RT "Botulinum neurotoxin type A: cleavage of the heavy chain into two
 RT halves and their partial sequences."; Arch. Biochem. Biophys. 266:142-151(1988).
 RL [10]
 RN
 RP
 RC SEQUENCE OF 448-482.
 RX MEDLINE=85285016; PubMed=3896784;
 RA Shone C.C., Hamblenton P., Melling J.;
 RT "Inactivation of Clostridium botulinum type A neurotoxin by trypsin
 RT and purification of two tryptic fragments. Proteolytic action near the
 RT COOH-terminus of the heavy subunit destroys toxin-binding activity."; Eur. J. Biochem. 151:75-82(1985).
 RL

RN
 RP
 RX SEQUENCE OF 866-879 AND 1147-1218.
 RA Gimenez J.A., Dasgupta B.R.;
 RT "Botulinum type A neurotoxin digested with pepsin yields 132, 97, 72,
 RT 45, 42, and 18 kD fragments."; J. Protein Chem. 12:351-363(1993).
 RL [12]
 RN
 RP IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=94063091; PubMed=8243676;
 RA Schiavo G., Santucci A., Dasgupta B.R., Mehta P.P., Jontes J.,
 RA Bentenati F., Wilson M.C., Montecucco C.;
 RT "Botulinum neurotoxins serotypes A and E cleave SNAP-25 at distinct
 RT COOH-terminal peptide bonds."; FEBS Lett. 335:99-103(1993).
 RL [13]
 RN
 RP IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=94124495; PubMed=82944407;
 RA Binz T., Biasi J., Yamasaki S., Baumeister A., Link E., Suedhof T.C.,
 RA Jahn R., Niemann H.;
 RT "Proteolysis of SNAP-25 by types E and A botulin neurotoxins."; J. Biol. Chem. 269:1617-1620(1994).
 RL [14]
 RN
 RP MUTAGENESIS OF GLU-261; PHE-265 AND TYR-365.
 RX MEDLINE=21556941; PubMed=11700044; DOI=10.1006/bbrc.2001.5911;
 RA Righi M., Caccin P., Johnson E.A., Montecucco C., Rossetto O.;
 RT "Site-directed mutagenesis identifies active-site residues of the
 RT light chain of botulinum neurotoxin type A."; Biochem. Biophys. Res. Commun. 288:1231-1237(2001).
 RL [15]
 RN
 RP X-RAY CRYSTALLOGRAPHY (3.3 ANGSTROMS).
 RX MEDLINE=98455071; PubMed=9783750;
 RA Lacy D.B., Tepp W., Cohen A.C., Dasgupta B.R., Stevens R.C.;
 RT "Crystal structure of botulinum neurotoxin type A and implications for
 RT toxicity."; Nat. Struct. Biol. 5:898-902(1998).
 RL
 CC -!- FUNCTION: Inhibits acetylcholine release. The botulinum toxin
 CC binds with high affinity to peripheral neuronal presynaptic
 CC membrane, is then internalized by receptor-mediated endocytosis.
 CC The C-terminus of the heavy chain (H) is responsible for the
 CC adherence of the toxin to the cell surface while the N-terminus
 CC mediates transport of the light chain from the endocytic vesicle
 CC to the cytosol. After translocation, the light chain (L)
 CC hydrolyzes the 197-Gln-|-Arg-198 bond in SNAP-25, thereby blocking
 CC neurotransmitter release. Inhibition of acetylcholine release
 CC results in flaccid paralysis, with frequent heart or respiratory
 CC failure.
 CC -!- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
 CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
 CC detected action on small molecule substrates.
 CC -!- COFACTOR: Binds 1 zinc ion per subunit.
 CC -!- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
 CC heavy chain (H).
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- PHARMACEUTICAL: Available under the name BOTOX (Allergan) for the
 CC treatment of strabismus and blepharospasm associated with dystonia
 CC and cervical dystonia. Also used for the treatment of hemifacial
 CC spasm and a number of other neurological disorders characterized
 CC by abnormal muscle contraction.
 CC -!- MISCELLANEOUS: There are seven antigenically distinct forms of
 CC botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
 CC -!- SIMILARITY: Belongs to peptidase family M27.
 CC -!- DATABASE: NAME=BOTOX product information Web site;
 CC WWW="http://www.botox.com/site/".
 CC -!- DATABASE: NAME=Protein Spotlight; NOTE=Issue 19 of February 2002;
 CC WWW="http://www.expasy.org/spotlight/articles/spot19.html".
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RA Schiavo G., Rossetto O., Santucci A., Dasgupta B.R., Montecucco C.;
 RT "Botulinum neurotoxins are zinc proteases";
 RL J. Biol. Chem. 267:23479-23483(1992).
 RN [7]
 RP IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poulain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 RT proteolytic cleavage of synaptobrevin";
 RL Nature 359:832-835(1992).
 CC -1- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
 CC release. It binds to peripheral neuronal synapses, is internalized
 CC and moves by retrograde transport up the axon into the spinal cord
 CC where it can move between postsynaptic and presynaptic neurons. It
 CC inhibits neurotransmitter release by acting as a zinc
 CC endopeptidase that cleaves the 76-Gln-Phe-77 bond of
 CC synaptobrevin-2.
 CC -1- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
 CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
 CC detected action on small molecule substrates.
 CC -1- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -1- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
 CC heavy chain (H). The light chain has the pharmacological activity,
 CC while the N- and C-terminal of the heavy chain mediate channel
 CC formation and toxin binding, respectively.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: There are seven antigenically distinct forms of
 CC botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
 CC -1- SIMILARITY: Belongs to peptidase family M27.
 CC -----
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 CC -----
 DR EMBL; M81186; AAA23211.1; -;
 DR EMBL; Z11934; CAA77991.1; -;
 DR EMBL; X70817; CAA50148.1; -;
 DR PIR; A48940; A48940.
 DR PDB; 1EPW; X-ray; A=1-1290.
 DR PDB; 1F31; X-ray; A=1-1290.
 DR PDB; 1F82; X-ray; A=1-424.
 DR PDB; 1F83; X-ray; A=1-425.
 DR PDB; 1FQ8; X-ray; A=1-424.
 DR PDB; 1G9A; X-ray; A=1-1290.
 DR PDB; 1G9B; X-ray; A=1-1290.
 DR PDB; 1G9C; X-ray; A=1-1290.
 DR PDB; 1G9D; X-ray; A=1-1290.
 DR PDB; 111E; X-ray; A=1-1290.
 DR MEROPS; M27.002; -;
 DR InterPro; IPR008985; ConA like lec_gl.
 DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; Peptidase M27.
 DR InterPro; IPR006025; Pept_M_Zn_BS.
 DR Pfam; PF01742; Peptidase_M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR PRODOM; PD001963; Bontoxilysin; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; 1.
 DR 3D-structure; Direct protein sequencing; Hydrolase; Metalloprotease;
 KW Neurotoxin; Transmembrane; Zinc.
 FT INIT_MET 0
 FT CHAIN 1 440 Botulinum neurotoxin B light-chain.
 FT CHAIN 441 1290 Botulinum neurotoxin B heavy-chain.
 FT METAL 229 229 Zinc (catalytic) (By similarity).
 FT ACT_SITE 230 230 By similarity.
 FT METAL 233 233 Zinc (catalytic) (By similarity).
 FT DISULFID 436 445 Interchain (Probable).
 FT CONFLICT 29 29 T -> M (in Ref. 4).
 FT CONFLICT 217 217 R -> G (in Ref. 2).
 FT

FT CONFLICT 224 224
 FT TURN 463 463
 FT STRAND 9 10
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 FT TURN 24 26
 FT STRAND 27 28
 FT TURN 33 33
 FT STRAND 40 41
 FT TURN 42 45
 FT STRAND 51 52
 FT TURN 55 58
 FT HELIX 63 64
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 FT STRAND 71 73
 FT TURN 75 78
 FT HELIX 81 98
 FT TURN 99 100
 FT HELIX 102 113
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 FT TURN 125 126
 FT STRAND 127 128
 FT TURN 133 135
 FT STRAND 136 140
 FT TURN 144 145
 FT STRAND 150 154
 FT STRAND 157 160
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 FT TURN 166 167
 FT STRAND 170 172
 FT STRAND 175 176
 FT TURN 177 178
 FT STRAND 179 180
 FT HELIX 181 183
 FT TURN 184 185
 FT STRAND 190 193
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 FT TURN 205 206
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 FT STRAND 219 220
 FT HELIX 223 238
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 FT TURN 333 334
 FT STRAND 337 338
 FT HELIX 341 353
 FT TURN 354 354
 FT STRAND 357 364
 FT TURN 365 365
 FT STRAND 377 382
 FT TURN 385 386
 FT TURN 388 390
 FT STRAND 392 392
 FT TURN 393 395
 FT STRAND 396 396
 FT TURN 397 397
 FT HELIX 400 402
 FT TURN 403 403
 FT HELIX 406 411
 FT STRAND 412 412
 FT TURN 413 415

A -> S (in Ref. 2).
 S -> R (in Ref. 4).

```

FT  HELIX      417      419

Query Match      51.8%; Score 58; DB 1; Length 1290;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY      1 FNNFTVSFWLRVPK 14
DB      922 FLDFSFSFWIRPK 935

RESULT 16
Q08077 ID Q08077 PRELIMINARY; PRT; 1291 AA.
AC Q08077
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE BONT/B.
GN Name=bont/b;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Exlund 17B ATCC25765;
RX MEDLINE=9412659; PubMed=7764370;
RA Hutson R.A., Collins M.D., East A.K., Thompson D.E.;
RT "Nucleotide sequence of the gene coding for non-proteolytic
RT Clostridium botulinum type B neurotoxin: comparison with other
RT clostridial neurotoxins.";
RL Curr. Microbiol. 28:101-110(1994).
DR EMBL; X71343; CAA50482.1; -.
DR PIR; I40631; I40631.
DR HSP; P10844; 1F31.
DR MEROPS; M27.002; -.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150513 MW; 71BCAFE23D69FAAA CRC64;

Query Match      51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY      1 FNNFTVSFWLRVPK 14
DB      923 FLDFSFSFWIRPK 936

RESULT 17
Q08096 ID Q08096 PRELIMINARY; PRT; 1291 AA.
AC Q08096
DT 01-MAR-2003 (TrEMBLrel. 23, Created)
DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neurotoxin.
GN Name=bont/b;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RX Santos-Buelga J.A.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; Y13630; CAA73968.1; -.
DR HSP; P10844; 1F31.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150513 MW; 71BCAFE23D69FAAA CRC64;

Query Match      51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY      1 FNNFTVSFWLRVPK 14
DB      923 FLDFSFSFWIRPK 936

RESULT 18
Q9ZAJ8 ID Q9ZAJ8 PRELIMINARY; PRT; 1291 AA.
AC Q9ZAJ8
DT 01-MAY-1999 (TrEMBLrel. 10, Created)
DT 01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Bont protein.
GN Name=bont;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RX MEDLINE=98440323; PubMed=9767710;
RA Santos-Buelga J., Collins M.D., East A.K.;
RT "Characterization of the genes encoding the Botulinum neurotoxin
RT complex in a strain of clostridium botulinum producing type B & F
RT neurotoxins.";
RL Curr. Microbiol. 37:312-318(1998).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RA Santos-Buelga J.A.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; Y13630; CAA73968.1; -.
DR HSP; P10844; 1F31.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150839 MW; E4D3B0E46AB2E735 CRC64;

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RN      1 [1]
RP SEQUENCE FROM N.A.
RA Ihara H., Kohda T., Morimoto F., Tsukamoto K., Karasawa T.,
RA Nakamura S., Mukamoto M., Kozaki S.;
RL Submitted (APR-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB084152; BAC22064.1; -.
DR HSP; P10844; 1EPW.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150574 MW; 0227CAEF4F58504D CRC64;

Query Match      51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY      1 FNNFTVSFWLRVPK 14
DB      923 FLDFSFSFWIRPK 936

RESULT 18
Q9ZAJ8 ID Q9ZAJ8 PRELIMINARY; PRT; 1291 AA.
AC Q9ZAJ8
DT 01-MAY-1999 (TrEMBLrel. 10, Created)
DT 01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Bont protein.
GN Name=bont;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RX MEDLINE=98440323; PubMed=9767710;
RA Santos-Buelga J., Collins M.D., East A.K.;
RT "Characterization of the genes encoding the Botulinum neurotoxin
RT complex in a strain of clostridium botulinum producing type B & F
RT neurotoxins.";
RL Curr. Microbiol. 37:312-318(1998).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RA Santos-Buelga J.A.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; Y13630; CAA73968.1; -.
DR HSP; P10844; 1F31.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150839 MW; E4D3B0E46AB2E735 CRC64;

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DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011085; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006025; Pept_M_Zn_BS.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150824 MW; D7CA07BAE2EB8CD2 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |

RESULT 19
Q933K0 PRELIMINARY; PRT; 1291 AA.
ID Q933K0
AC Q933K0;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Type B cryptic neurotoxin.
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RA Kirma N., Ferreira J.L., Baumstark B.R.;
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF300466; AAL11499.1; -.
DR EMBL: AF300465; AAL11498.1; -.
DR HSSP: P10844; If31.
DR GO: 0008233; P: peptidase activity; IEA.
DR GO: 0009405; P: pathogenesis; IEA.
DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011065; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006025; Pept_M_Zn_BS.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150842 MW; 7AC1737B0FA5A151 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |

RESULT 20
Q93G71 PRELIMINARY; PRT; 1291 AA.
ID Q93G71
AC Q93G71;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neurotoxin type B.
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RA Kirma N., Ferreira J.L., Baumstark B.R.;
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF295926; AAK97132.1; -.
DR HSSP: P10844; If31.
DR GO: 0008233; P: peptidase activity; IEA.
DR GO: 0009405; P: pathogenesis; IEA.

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DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011085; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006025; Pept_M_Zn_BS.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150824 MW; D7CA07BAE2EB8CD2 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |

RESULT 21
VP2_AHSV6 STANDARD; PRT; 1051 AA.
ID VP2_AHSV6
AC 071024;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Outer capsid protein VP2.
GN Name=S2; Synonyms=L2;
OS African horse sickness virus 6 (AHSV-6) (African horse sickness virus
OS (serotype 6)).
OC Viruses; dsRNA viruses; Reoviridae; Orbivirus.
OX NCBI_TaxID=86060;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=98278331; PubMed=9617769;
RA Williams C.F., Inoue T., Lucas A.-M., Zanotto P., Roy P.;
RT "The complete sequence of four major structural proteins of African
RT horse sickness virus serotype 6: evolutionary relationships within and
RT between the orbiviruses."
RL Virus Res. 53:53-73(1998).
CC -!- FUNCTION: The VP2 protein is one of the two proteins (with VP5)
CC which constitute the virus particle outer capsid. It is the major
CC target of the host immunogenic response.
CC -!- SIMILARITY: Belongs to the reoviruses VP2 protein family.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL: AF021235; AAC40994.1; -.
DR InterPro: IPR001742; Orbi_VP2.
DR Pfam: PF00898; Orbi_VP2; 1.
DR Coat protein.
SQ SEQUENCE 1051 AA; 122326 MW; 2B04DB9E389F4B5F CRC64;

Query Match 50.9%; Score 57; DB 1; Length 1051;
Best Local Similarity 47.6%; Pred. No. 2.6;
Matches 10; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVKVSASHLE 21
DB 636 FSKRFVSFWYRVEKITTKHLE 656
| : : : : : : : |

RESULT 22
Q45861

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FT NON TER      1
FT NON TER      367
FT NON TER      367
SQ SEQUENCE      367 AA; 42854 MW; 0810595B3A865570 CRC64;

Query Match      50.0%; Score 56; DB 2; Length 367;
Best Local Similarity 53.8%; Pred. No. 1.3;
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY      1 FNNFTVSFWLRVP 13
       : |||:||||:|
Db      297 YKNFSFWVRIP 309

RESULT 24
BXE_CLOBO
ID_BXE_CLOBO      STANDARD;      PRT; 1250 AA.
AC Q00496;
DT 01-JUL-1993 (Rel. 26, Created)
DT 01-JUL-1993 (Rel. 26, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Botulinum neurotoxin type E precursor (EC 3.4.24.69) (BoNT/E)
DE (Bontoxilsyn E).
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Type E / Beluga;
RX MEDLINE=92181428; PubMed=1543481;
RA Poulet S., Hauser D., Quanz M., Niemann H., Popoff M.R.;
RT "Sequences of the botulin neurotoxin E derived from Clostridium
RT botulinum type E (strain Beluga) and Clostridium butyricum (strains
RT ATCC 43181 and ATCC 43755).";
RL Biochem. Biophys. Res. Commun. 183:107-113(1992).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=92174922; PubMed=1541280;
RA Whelan S.M., Elmore M.J., Bodsworth N.J., Atkinson T., Minton N.P.;
RT "The complete amino acid sequence of the Clostridium botulinum type-E
RT neurotoxin, derived by nucleotide-sequence analysis of the encoding
RT gene.";
RL Eur. J. Biochem. 204:657-667(1992).
RN [3]
RP SEQUENCE OF 1-251 FROM N.A.
RX MEDLINE=90264400; PubMed=2160960;
RA Binz T., Kurazono H., Wille M., Frevert J., Wernars K., Niemann H.;
RT "The complete sequence of botulinum neurotoxin type A and comparison
RT with other clostridial neurotoxins.";
RL J. Biol. Chem. 265:9153-9158(1990).
RN [4]
RP SEQUENCE OF 1-13.
RX MEDLINE=85197963; PubMed=3888113;
RA Schmidt J.J., Sathiyamoorthy V., Dasgupta B.R.;
RT "Partial amino acid sequences of botulinum neurotoxins types B and
RT E.";
RL Arch. Biochem. Biophys. 238:544-548(1985).
RN [5]
RP SEQUENCE OF 419-426.
RX MEDLINE=90344918; PubMed=2116911;
RA Glnenez J.A., Dasgupta B.R.;
RT "Botulinum neurotoxin type E fragmented with endoproteinase Lys-C
RT reveals the site trypsin nicks and homology with tetanus neurotoxin.";
RL Biochimie 72:213-217(1990).
RN [6]
RP IDENTIFICATION OF SUBSTRATE.
RX MEDLINE=94063091; PubMed=8243676;
RA Schiavo G., Santucci A., Dasgupta B.R., Mehta P.P., Jontes J.,
RA Benfenati F., Wilson M.C., Montecucco C.;
RT "Botulinum neurotoxins serotypes A and E cleave SNAP-25 at distinct
RT COOH-terminal peptide bonds.";
RL FEBS Lett. 335:99-103(1993).
RN [7]

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DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; Peptidase_M27.
 DR InterPro; IPR006025; Pept_M_zn_BS.
 DR Pfam; PF01742; Peptidase_M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR ProDom; PD001963; Bontoxilysin; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; 1.
 KW Direct protein sequencing; Hydrolase; Metalloprotease; Neurotoxin;
 Transmembrane; Zinc.
 FT INIT_MET 0
 FT CHAIN 1 421 Botulinum neurotoxin E light-chain.
 FT CHAIN 422 1250 Botulinum neurotoxin E heavy-chain.
 FT METAL 211 211 Zinc (catalytic) (By similarity).
 FT ACT_SITE 212 212 By similarity.
 FT METAL 215 215 Zinc (catalytic) (By similarity).
 FT DISULFID 411 425 Interchain (Probable).
 FT CONFLICT 229 229 K -> M (in Ref. 2).
 SQ SEQUENCE 1250 AA; 143265 MW; 8171B5B2C312857 CRC64;

Query Match 50.0%; Score 56; DB 1; Length 1250;
 Best Local Similarity 53.8%; Pred. No. 4.6;
 Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVP i3
 : ||: ||: ||:
 Db 911 YKNFSISFWVRIP 923

Search completed: January 25, 2005, 06:06:23
 Job time : 71.4167 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 26, 2005, 07:04:37 ; Search time 130.667 Seconds
(without alignments)
57.653 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSFWLVRPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 211

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 500 summaries

Database : A_Geneseq_23Sep04:*

1: geneseqp1980s:*

2: geneseqp1990s:*

3: geneseqp2000s:*

4: geneseqp2001s:*

5: geneseqp2002s:*

6: geneseqp2003as:*

7: geneseqp2003bs:*

8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	21	2 AAR11896	Aar11896 Immunogen
2	112	100.0	21	2 AAW06130	Aaw06130 Tetanus t
3	112	100.0	21	2 AAR88397	Aar88397 T-cell an
4	112	100.0	21	2 AAW46449	Aaw46449 Broad ran
5	112	100.0	21	2 AAW67034	Aaw67034 Tetanus t
6	112	100.0	21	2 AAW67579	Aaw67579 T-cell ep
7	112	100.0	21	2 AAW73222	Aaw73222 Tetanus t
8	112	100.0	21	3 AAY92626	Aay92626 Foreign e
9	112	100.0	21	3 AAY99876	Aay99876 Tetanus t
10	112	100.0	21	3 AAY84428	Aay84428 Amino aci
11	112	100.0	21	3 AAY49260	Aay49260 CD4+ T ce
12	112	100.0	21	3 AAB45512	Aab45512 Tetanus P
13	112	100.0	21	4 AAE11764	Aae11764 Clostridi
14	112	100.0	21	4 AAB49072	Aab49072 Tetanus t
15	112	100.0	21	4 AAB68637	Aab68637 HER-2 B c
16	112	100.0	21	4 AAB61958	Aab61958 Tetanus T
17	112	100.0	21	4 AAB20144	Aab20144 Tetanus t
18	112	100.0	21	4 AAB85453	Aab85453 Universal
19	112	100.0	21	4 AAB85702	Aab85702 Amino aci
20	112	100.0	21	5 ABG31775	Abg31775 T helper
21	112	100.0	21	5 AAU11415	Aau11415 Tetanus t
22	112	100.0	21	6 ABP72695	Abp72695 Tetanus t
23	112	100.0	21	6 ADA25170	Ada25170 C. tetani
24	112	100.0	21	6 AAO30455	Aao30455 Tetanus t
25	112	100.0	21	6 AAO30455	Aao30455 Tetanus t

26	112	100.0	21	7 ABR82483	AbR82483 Tetanus t
27	112	100.0	21	7 ADC09977	AdC09977 Tetanus t
28	112	100.0	21	7 ADC89659	AdC89659 C. tetani
29	112	100.0	21	7 ADC81610	AdC81610 Tetanus t
30	112	100.0	21	7 ADD71439	AdD71439 HLA-DP4 b
31	112	100.0	21	8 AAO24396	Aao24396 HLA-A24-r
32	112	100.0	21	8 ADL64022	AdL64022 Tetanus t
33	112	100.0	21	8 ADL63947	AdL63947 Tetanus t
34	112	100.0	21	8 ADL97909	AdL97909 Tetanus t
35	112	100.0	21	8 ADM06895	AdM06895 Tetanus t
36	112	100.0	21	8 ADM043876	AdM043876 Amino aci
37	112	100.0	21	8 ADP02877	AdP02877 Tetanus t
38	112	100.0	21	8 ADP02884	AdP02884 Tetanus t
39	112	100.0	21	8 ADP02884	AdP02884 Tetanus t
40	112	100.0	21	8 ADP04308	AdP04308 Tetanus t
41	112	100.0	21	8 ADP48562	AdP48562 Promiscuo
42	112	100.0	21	8 ADP90538	AdP90538 Tetanus t
43	112	100.0	28	4 AAB46176	Aab46176 Tetanus t
44	112	100.0	28	8 ADP02901	AdP02901 Fusion pr
45	112	100.0	31	3 AAY92653	Aay92653 PSMpep010
46	112	100.0	31	3 AAY92654	Aay92654 PSMpep011
47	112	100.0	31	3 AAY92655	Aay92655 PSMpep012
48	112	100.0	32	2 AAR62702	Aar62702 LHRH-cont
49	112	100.0	33	4 AAB49075	Aab49075 Amyloid b
50	112	100.0	34	5 AAU11421	Aau11421 Synthetic
51	112	100.0	36	4 AAG63662	Aag63662 Peptide c
52	112	100.0	36	4 AAG63515	Aag63515 A peptide
53	112	100.0	36	8 ADP02886	AdP02886 Tetanus t
54	112	100.0	37	5 AAU11425	Aau11425 Synthetic
55	112	100.0	43	4 AAB49076	Aab49076 Amyloid b
56	112	100.0	43	4 AAB46177	Aab46177 Tetanus t
57	112	100.0	43	8 ADP02902	AdP02902 Fusion pr
58	112	100.0	44	4 AAB49090	Aab49090 Amyloid b
59	112	100.0	44	4 AAB46194	Aab46194 Tetanus t
60	112	100.0	44	8 ADP02917	AdP02917 Fusion pr
61	112	100.0	50	5 AAU11429	Aau11429 Synthetic
62	112	100.0	51	4 AAB49091	Aab49091 Amyloid b
63	112	100.0	51	4 AAB46195	Aab46195 Tetanus t
64	112	100.0	51	8 ADP02918	AdP02918 Fusion pr
65	112	100.0	59	4 AAG63661	Aag63661 Peptide c
66	112	100.0	59	4 AAG63513	Aag63513 A peptide
67	112	100.0	63	2 AAR14263	Aar14263 Immunogen
68	112	100.0	64	2 AAR14261	Aar14261 Immunogen
69	112	100.0	64	8 ADM06902	AdM06902 Mature ra
70	112	100.0	65	2 AAR14265	Aar14265 Immunogen
71	112	100.0	65	2 AAR14262	Aar14262 Immunogen
72	112	100.0	68	8 ADM06904	AdM06904 Mature gh
73	112	100.0	68	8 ADM06903	AdM06903 Mature gh
74	112	100.0	72	4 AAB46190	Aab46190 Tetanus t
75	112	100.0	74	8 ADP02897	AdP02897 Fusion pr
76	112	100.0	77	2 AAR14264	Aar14264 Immunogen
77	112	100.0	79	8 ADP02915	AdP02915 Fusion pr
78	112	100.0	101	8 ADP02896	AdP02896 Fusion pr
79	112	100.0	109	4 AAB20149	Aab20149 Growth di
80	112	100.0	109	4 AAB20151	Aab20151 Growth di
81	112	100.0	109	4 AAB20150	Aab20150 Growth di
82	112	100.0	109	4 AAB20148	Aab20148 Growth di
83	112	100.0	121	8 ADL63984	AdL63984 Chimeric
84	112	100.0	121	8 ADL63908	AdL63908 Chimeric
85	112	100.0	121	8 ADL97891	AdL97891 Human IL-
86	112	100.0	122	3 AAB45524	Aab45524 Modified
87	112	100.0	122	3 AAB45507	Aab45507 Modified
88	112	100.0	123	8 ADL63986	AdL63986 Chimeric
89	112	100.0	123	8 ADL63910	AdL63910 Chimeric
90	112	100.0	123	8 ADL97893	AdL97893 Murine IL
91	112	100.0	124	3 AAB45496	Aab45496 Modified
92	112	100.0	124	3 AAB45515	Aab45515 Modified
93	112	100.0	128	3 AAB45529	Aab45529 Modified
94	112	100.0	128	3 AAB45525	Aab45525 Modified
95	112	100.0	128	3 AAB45508	Aab45508 Modified
96	112	100.0	130	3 AAB45506	Aab45506 Modified
97	112	100.0	130	3 AAB45497	Aab45497 Modified
98	112	100.0	130	3 AAB45509	Aab45509 Modified

XX PA (ENIE) ENRICERCH SPA.
 XX PI Bianchi E, Pessi A, Corradin G;
 XX DR WPI; 1991-141874/20.
 XX PT Synthetic peptide(s) used as universal carriers - for preparing
 XX PT immunogenic conjugates used as vaccines against plasmodium falciparum.
 XX PS Claim 1; Page 13; 16pp; English.
 XX CC This peptide corresponds to residues 947-967 of Tetanus toxin. It can be
 XX CC used as a universal carrier for the prepn. of an immunogenic conjugate.
 XX CC It is covalently bound to a peptide or polysaccharide hapten derived from
 XX CC a pathogen. This conjugate can be used as a vaccine for malaria. This
 XX CC peptide is recognised by different T- helper cell clones in association
 XX CC with alleles of the human MHC. It contains 2 epitopes: (a) 953-967,
 XX CC recognised by DR5-restricted clones; and (b) 947-960, recognised by all
 XX CC other DR and DP- restricted clones. (Updated on 25-MAR-2003 to correct PI
 XX CC field.) (Updated on 27-AUG-2003 to correct OS field.) (Updated on 24-OCT-
 XX CC 2003 to standardise OS field)
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 2
 ID AAW06130 standard; peptide; 21 AA.
 AC AAW06130;
 XX DT 07-FEB-1997 (first entry)
 XX DE Tetanus toxoid protein T-cell epitope.
 XX KW Cholesteryl ester transfer protein; CETP; antigen; vaccine;
 XX KW cardiovascular disease; atherosclerosis; tetanus toxoid; T-cell epitope.
 XX OS Clostridium tetani.
 XX PN WO9634888-A1.
 XX PD 07-NOV-1996.
 XX PF 01-MAY-1996; 96WO-US006147.
 XX PR 01-MAY-1995; 95US-00432483.
 XX PA (TCEL-) T CELL SCI INC.
 XX PI Rittershaus CW, Thomas LJ;
 XX DR WPI; 1996-506103/50.
 XX PT Cholesteryl ester transfer protein B cell epitope linked to T cell
 XX PT epitope - used to generate vaccine to regulate CETP activity for
 XX PT decreasing the risk of developing a cardiovascular disease e.g.
 XX PT atherosclerosis.
 XX PS Claim 11; Page 43; 72pp; English.
 XX CC A helper T-cell epitope (AAW06130) comprises amino acids 947-967 of
 XX CC tetanus toxoid protein. It can be utilised in novel peptide vaccines (see
 XX CC also AAW06129, AAW06132) also including B-cell epitope(s) from human or

CC rabbit cholesteryl ester transfer protein (CETP) to elicit an immune
 CC response against endogenous CETP activity, thereby treating or preventing
 CC a cardiovascular disease, such as atherosclerosis
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 3
 ID AAR88397 standard; peptide; 21 AA.
 AC AAR88397;
 XX DT 12-JUN-1996 (first entry)
 XX DE T-cell antigen TT3 peptide.
 XX KW T-antigen; vaccine; antibody; T-cell; T-lymphocyte; alpha-helix;
 XX KW coiled-coil heterodimer; core peptide; subunit.
 XX OS Synthetic.
 XX PN WO9531480-A1.
 XX PD 23-NOV-1995.
 XX PF 18-MAY-1995; 95WO-CA000293.
 XX PR 18-MAY-1994; 94US-00245507.
 XX PA (SPIS-) SPI SYNTHETIC PEPTIDES INC.
 XX PI Houston ME, Zhou NE, Kay CM, Hodges RS, Cachia PJ, Irvin RT;
 XX DR WPI; 1996-010880/01.
 XX PT Hetero-dimeric polypeptide immunogen in coiled-coil configuration with
 XX PT different antigens on each sub:unit - useful in vaccines and for antibody
 XX PT prodn.
 XX PS Claim 7; Page 62; 95pp; English.
 XX CC This T-cell antigen TT3 peptide may be attached to a core peptide
 XX CC contained in one of the 2 subunits of an alpha-helical coiled-coil
 XX CC heterodimer. Each core peptide is comprised of terminal and internal AA
 XX CC repeat sequences. This peptide antigen is attached to the core peptide
 XX CC through covalent linkages to certain AA of the internal repeats. The 2
 XX CC subunits of the heterodimer are arranged in a stable alpha-helical coiled
 XX CC -coil configuration having a 1:1 stoichiometry, and the peptide antigen
 XX CC is disposed toward the outer surfaces of the configuration. The
 XX CC heterodimer may be used as a synthetic vaccine (optionally multivalent)
 XX CC or to generate antibodies
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 4

AAW46449
ID AAW46449 standard; peptide; 21 AA.
AC AAW46449;
XX
XX
XX 18-MAY-1998 (first entry)
XX
XX Broad range helper T cell epitope from the tetanus toxoid protein.
XX
XX Cholesteryl ester transfer protein; CETP; cholesteryl ester;
KW high density lipoprotein; HDL; very low density lipoprotein; VLDL;
KW low density lipoprotein; LDL; T cell epitope; antibody;
KW DNA plasmid-based vaccine; broad range helper T cell epitope; treatment;
KW cardiovascular disease.
XX
XX Clostridium tetani.
OS
XX WO9741227-A1.
XX
XX 06-NOV-1997.
XX
XX 01-MAY-1997; 97WO-US007294.
XX
XX 01-MAY-1996; 96US-00640713.
XX
XX 21-FEB-1997; 97US-00802967.
XX
XX (TCEL-) T CELL SCI INC.
XX
XX Thomas LJ;
XX
XX WPI; 1997-549731/50.
XX
XX DNA plasmid-based vaccine encodes CERP B cell and helper T cell
PT epitope(s) - used for elevating high density lipoprotein levels, and for
PT treating cardiovascular disease.
XX
XX Disclosure; Page 44; 67pp; English.
XX
XX The present sequence represents a broad range helper T cell epitope of
CC the tetanus protein. It can be used in DNA plasmid-based vaccines against
CC cholesteryl ester transfer proteins (CETPs). CETPs mediate the transfer
CC of cholesteryl esters from high density lipoprotein (HDL) to very low
CC density lipoprotein (VLDL) and low density lipoprotein (LDL), and vice
CC versa. An increased CERP activity produces an atherogenic lipoprotein
CC profile and induces atherosclerosis. A DNA plasmid-based vaccine
CC comprises sequences encoding at least one B cell epitope of CERP linked
CC in frame with at least one segment encoding a broad range helper T cell
CC epitope. The vaccines can be used to elevate the ratio of circulating HDL
CC to circulating LDL, VLDL or total cholesterol in a human. It can also be
CC used for decreasing the level of endogenous CERP activity in a human. The
CC vaccine can be used to produce anti-CERP antibodies in vivo and for
CC treating cardiovascular disease
XX
XX Sequence 21 AA;
SQ
Query Match 100.0%; Score 112; DB 2; Length 21;
Best Local Similarity 100.0%; Pred. No. 7,8e-12;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 1 FNNFTVSFWLRVPKVSASHLE 21
RESULT 5
AAW67034
ID AAW67034 standard; peptide; 21 AA.
XX
XX AAW67034;
XX
XX 15-DEC-1998 (first entry)
XX
XX Tetanus toxin fragment (residues 947-967).
XX

XX
KW Tetanus toxin; vaccine; antibody; carbohydrate peptide conjugate;
KW dendrimeric poly-lysine; epitope; tumour.
XX
OS Clostridium tetani.
XX
XX WO9843677-A1.
XX
XX 08-OCT-1998.
XX
XX 27-MAR-1998; 98WO-EP001922.
XX
XX 27-MAR-1997; 97US-0041726P.
XX
XX (INSP) INST PASTEUR.
XX
XX Bay S, Cantacuzene D, Leclerc C, Lo-Man R;
XX WPI; 1998-557071/47.
XX
XX Carbohydrate peptide conjugate used as vaccine - comprises carrier with
PT dendrimeric poly-lysine enabling multiple epitopes to be covalently
PT attached.
XX
XX Disclosure; Page 13; 55pp; English.
XX
XX The invention relates to a new carbohydrate peptide conjugate, which
CC comprises a carrier with a dendrimeric poly-lysine enabling multiple
CC epitopes to be covalently attached to it. Also claimed are: (1) an
CC antibody purified from biological fluid or cells of organisms
CC administered with the carbohydrate peptide conjugate, and (2) a diagnosis
CC kit comprising antigen-specific antibodies elicited by immunisation with
CC the carbohydrate peptide conjugate. The peptide conjugate, antibody and
CC diagnosis kit are used to provide pharmaceutical compositions and
CC vaccines against tumours. These can be used to support an immune response
CC against viral infections caused by hepatitis virus, HIV or cytomegalo
CC virus. They can be used to enhance immune responses, especially B- and T-
CC cell responses, of humans and animals against bacterial infections. The
CC carbohydrate peptide conjugate stimulates the antibody and T-cell
CC response without stimulating undesired immune responses. The composition
CC is capable of increasing the survival of tumour bearing humans and
CC animals. The present sequence corresponds to residues 947-967 of tetanus
CC toxin. The synthetic peptide corresponding to this sequence may be used
CC as an epitope in a carbohydrate peptide conjugate
XX
XX Sequence 21 AA;
SQ
Query Match 100.0%; Score 112; DB 2; Length 21;
Best Local Similarity 100.0%; Pred. No. 7,8e-12;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 1 FNNFTVSFWLRVPKVSASHLE 21
RESULT 6
AAW67579
ID AAW67579 standard; peptide; 21 AA.
XX
XX AAW67579;
XX
XX 02-MAR-1999 (first entry)
XX
XX T-cell epitope peptide #5 for chimeric fimbria/T-cell epitope peptide.
DE
XX Chimeric; non-typable Haemophilus influenzae; fimbria; T-cell epitope;
KW immunogenic composition; immune response.
XX
XX Synthetic.
XX
XX US5843464-A.
XX

PD 01-DEC-1998.
 PF 02-JUN-1995; 95US-00460502.
 XX 02-JUN-1995; 95US-00460502.
 PR (OHIS) UNIV OHIO STATE.
 XX Kaumaya PTP, Bakaletz LO;
 PI WPI; 1999-044514/04.
 DR
 XX Synthetic chimeric fimbria peptide - useful for vaccination against non-
 PT typable Haemophilus influenzae.
 XX Disclosure; Col 4; 16pp; English.
 XX The invention relates to the manufacture of a synthetic chimeric peptide
 CC comprising a non-typable Haemophilus influenzae fimbria peptide fused via
 CC a linker peptide to a T-cell epitope peptide. The chimeric peptide is
 CC used in immunogenic compositions which induce an immune response against
 CC non-typable Haemophilus influenzae. This sequence represents an example
 CC of a T-cell epitope peptide used to generate the chimeric peptide
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 RESULT 7
 AAW73222
 ID AAW73222 standard; protein; 21 AA.
 AC AAW73222;
 XX 25-JAN-1999 (first entry)
 DT Tetanus toxoid epitope.
 DE Multispecific single chain antibody; antibody H22; tumour cell; therapy;
 KW antibody-dependent cellular cytotoxicity; ADCC; HER 2/neu; infection;
 KW epidermal growth factor receptor; breast cancer; ovarian cancer.
 XX Synthetic.
 OS US5837243-A.
 PN 17-NOV-1998.
 PD 07-JUN-1996; 96US-00661052.
 PF 07-JUN-1995; 95US-00484172.
 PR (MEDA-) MEDAREX INC.
 XX Sonasundaram C, Graziano R, Deo YM, Goldstein J;
 PI WPI; 1999-023374/02.
 DR Specific killing of tumour cells - using a multi-specific molecule
 PT comprising an anti-Fc receptor antibody and a portion which binds to a
 PT target cell.
 XX Example 7; Col 27; 57pp; English.
 PS This sequence represents a tetanus toxoid epitope and is recognised by
 XX the multispecific single chain antibody designated H22. The antibody can

CC be used in the method of the invention for inducing antibody-dependent
 CC cellular cytotoxicity (ADCC) against a tumour cell which is characterised
 CC by overexpression of HER 2/neu or epidermal growth factor receptor
 CC (EGFR), comprises contacting the tumour cell with a multispecific protein
 CC molecule (preferably a single chain antibody) comprising: (a) an anti-Fc
 CC receptor antibody or an antigen binding fragment; (b) a portion which
 CC binds to HER 2/neu; and (c) a portion which binds to EGFR. The method can
 CC be used for treating cancers especially breast cancer or ovarian cancer.
 CC The multispecific antibody can also be administered prophylactically to
 CC vaccinate a subject against infection by a target cell
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 RESULT 8
 AAY92626
 ID AAY92626 standard; protein; 21 AA.
 AC AAY92626;
 XX 10-AUG-2000 (first entry)
 DT Foreign epitope P30.
 DE Foreign epitope; P2; prostate specific membrane antigen; PSM; Her2;
 KW Heregulin 2; Fibroblast growth factor 8b; FGF8b; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX Clostridium tetani.
 OS WO200020027-A2.
 PN 13-APR-2000.
 PD 05-OCT-1999; 99WO-DK000525.
 PF 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 PI WPI; 2000-349917/30.
 DR N-PSDB; AAA09461.
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX Example 1; Page 214; 220pp; English.
 XX The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, human prostate
 CC specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast
 CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
 CC presentation by antigen producing cells (APCs) of the animals immune
 CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 CC the PA and/or at least 1 B-cell group derived from the cell-associated PA
 CC ; and (2) at least 1 first T helper cell group which is foreign to the
 CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 CC comprising a substantial part of all known and predicted CTL and B-cell
 CC epitopes of the respective PA and including at least one foreign T helper

CC epitope (e.g. P2 and/or P30) are also claimed. The method is used to
 CC treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, rGF8b and Her2, respectively
 XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 9
 AAY99876
 ID AAY99876 standard; protein; 21 AA.
 XX
 AC AAY99876;

XX
 XX 03-OCT-2000 (first entry)
 DT
 DE Tetanus toxin T cell epitope helper peptide P30.

XX Human; MAGE-10; tumour rejection antigen precursor; bladder cancer;
 KW prostate cancer; lung cancer; cancer detection; oesophageal cancer;
 KW head and neck cancer; melanoma; myeloma; sarcoma; immunogen;
 KW tetanus toxin.
 XX

OS Homo sapiens.

XX WO200026407-A1.

XX 11-MAY-2000.

XX 15-OCT-1999; 99WO-US024258.
 XX 30-OCT-1998; 98US-00183714.

XX (LUDW-) LUDWIG INST CANCER RES.

XX Boon-Falleur T, Brasseur F, Rimoldi D, Deplaen E;
 XX WPI; 2000-451624/39.

XX Determining presence of cancer in samples, especially useful for
 PT detecting bladder, prostate and lung cancer comprises assaying sample for
 PT expression of tumor rejection antigen precursor MAGE-10.

XX Example 12; Page 14; 26pp; English.

XX The present sequence is a tetanus toxin T cell epitope known as Helper
 CC Peptide P30. Hybrids of this peptide and an immunogenic peptide derived
 CC from tumour rejection antigen precursor MAGE-10 were used to generate
 CC polyclonal antiserum against MAGE-10. MAGE-10 binding monoclonal
 CC antibodies can be used to detect MAGE-10 expression. A correlation
 CC between MAGE-10 expression and cancer has been discovered and thus by
 CC determining the presence of MAGE-10, the presence of cancer can be
 CC determined. MAGE-10 expression can be detected using an immunoassay, an
 CC oligonucleotide hybridisation assay or via other standard techniques.
 CC This method is especially useful for determining the presence of bladder,
 CC oesophageal, head and neck, prostate or lung cancer, or melanoma, myeloma
 CC or sarcoma
 XX

SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 10
 AAY84428

XX ID AAY84428 standard; peptide; 21 AA.

XX AC AAY84428;

XX 25-JUL-2000 (first entry)

XX Amino acid sequence of the tetanus toxoid P30 epitope.

DE Osteoprotegerin ligand, OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; tetanus toxoid P30 epitope.
 XX

OS Clostridium tetani.

XX WO200015807-A1.

XX 23-MAR-2000.

XX 13-SEP-1999; 99WO-DK000481.

XX 15-SEP-1998; 98DK-00001164.

XX 02-OCT-1998; 98US-0102896P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Haaning J;

XX WPI; 2000-271444/23.

XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.

XX Example; Page 106; 110pp; English.

XX The present sequence represents the tetanus toxoid P30 epitope. It is
 CC used to create a fusion protein with murine osteoprotegerin ligand
 CC (OPGL). Osteoprotegerin is a secreted member of the tumour necrosis
 CC factor receptor family, which blocks osteoclastogenesis in a dose
 CC dependent manner. The OPGL protein is synthesised as a type II
 CC transmembrane protein. The murine and human OPGL polypeptides are 87%
 CC homologous. OPGL is a potent osteoclast differentiation factor when
 CC combined with CSF-1. It is not capable of inducing osteoclast
 CC differentiation in the absence of CSF-1. OPGL is also an activator of
 CC mature osteoclasts. The specification describes a method for the in vivo
 CC down-regulation of OPGL activity in an animal. The method comprises using
 CC at least one OPGL polypeptide or subsequence, and/or at least one OPGL
 CC analogue to induce an immune response in the animal. The method and OPGL
 CC polypeptide are useful for treating, preventing and ameliorating
 CC osteoporosis or other diseases or conditions characterised by excessive
 CC bone resorption
 XX

SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 11

AAY49260

ID AAY49260 standard; peptide; 21 AA.

XX AAY49260;

XX DT 07-FEB-2000 (first entry)
 XX DE CD4+ T cell epitope P30TT fragment.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX PF 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX DR WPI; 2000-023325/02.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 PT diseases caused by encapsulated bacteria.
 XX PS Disclosure; Page 36; 76pp; English.
 XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. Sequences AAY49256-266 represent CD4+ T cell epitopes inserted
 CC in the recombinant polypeptide carrier proteins
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 12
 AAB45512
 ID AAB45512 standard; protein; 21 AA.
 XX AC AAB45512;
 XX DT 26-FEB-2001 (first entry)
 XX DE Tetanus P30 epitope SEQ ID NO: 24.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Clostridium tetani.
 XX PN WO200065058-A1.
 XX PD 02-NOV-2000.
 XX

PF 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Klysner S;
 PI WPI; 2000-672791/65.
 DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 6; Page 137; 172pp; English.
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 13
 AAE11764
 ID AAE11764 standard; peptide; 21 AA.
 XX AC AAE11764;
 XX DT 18-DEC-2001 (first entry)
 XX DE Clostridium tetani P30 epitope.
 XX KW Amyloid protein; neuroprotective; nootropic; immunostimulant; vaccine;
 KW Alzheimer's disease; anticonvulsant; gene therapy; Pick's disease;
 KW antidiabetic; systemic amyloidosis; maturity onset diabetes; ALS;
 KW amyotrophic lateral sclerosis; Parkinson's disease; encephalopathy;
 KW Huntington's disease; fronto-temporal dementia; P30 epitope.
 XX OS Clostridium tetani.
 XX PN WO200162284-A2.
 XX PD 30-AUG-2001.
 XX PF 19-FEB-2001; 2001WO-DK000113.
 XX PR 21-FEB-2000; 2000DK-00000265.
 PR 01-MAR-2000; 2000US-0186295P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Birk P, Jensen MR, Nielsen KG;
 PI WPI; 2001-589796/66.
 DR N-PSDB; AAD18756.
 XX In vivo down-regulation of amyloid protein for the treatment of
 PT Alzheimer's, comprises presenting an amyloidogenic polypeptide or its

PT subsequence and/or at least one analogue of the amyloidogenic polypeptide
 XX to the immune system.

PS Example 3; Page 118; 120pp; English.

XX The invention relates to a method for in vivo down-regulation of amyloid
 CC protein such as beta amyloid (Abeta) in an animal, including human. The
 CC method comprising presenting to the animal's immune system an
 CC immunogenically effective amount of at least one amyloidogenic protein or
 CC its subsequence and/or at least one analogue of the amyloidogenic
 CC polypeptide. The amyloidogenic protein or its subsequence, and its
 CC analogue is useful for the preparation of an immunogenic composition
 CC comprising an adjuvant for down-regulating amyloid in an animal. They are
 CC also useful in the treatment, prophylaxis or amelioration of Alzheimer's
 CC disease or other diseases characterised by amyloid deposits. They are
 CC also useful in the treatment of systemic amyloidosis, maturity onset
 CC diabetes, Parkinson's disease, Huntington's disease, fronto-temporal
 CC dementia, amyotrophic lateral sclerosis (ALS), Pick's disease and prion-
 CC related transmissible spongiform encephalopathies. They are also useful
 CC for inducing production of antibodies against an amyloidogenic
 CC polypeptide. The present sequence is Clostridium tetani P30 epitope
 CC related to the invention

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB ||||||||||||||||
 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 14

AAB49072
 ID AAB49072 standard; peptide; 21 AA.

XX AAB49072;

XX 27-MAR-2001 (first entry)

XX Tetanus toxoid TT947-967 T-cell epitope, SEQ ID NO:8.

XX Amyloid disease; Amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW carrier protein; universal T-cell epitope.

XX Clostridium tetani.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

PS Disclosure; Page 43; 140pp; English.

XX

CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g. rheumatoid
 CC arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents a universal T-cell epitope which may be used as a carrier for
 CC an epitope derived from an amyloid plaque component in a composition of
 CC the invention

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB ||||||||||||||||
 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 15

AAB46173

ID AAB46173 standard; peptide; 21 AA.

XX AAB46173;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid TT947-967 epitope.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; nontropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Vednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX PS Disclosure; Page 28; 143pp; English.

XX CC This invention describes a novel method of preventing or treating a

XX CC disease associated with amyloid deposits of amyloid precursor protein

XX CC (APP) Abeta fragments in the brain of a patient, which comprises

XX CC administering to the patient: (a) an antibody that binds to Abeta, the

XX CC antibody binds to an amyloid deposit and induces a clearing response (Fc

XX CC receptor mediated phagocytosis) against it (b) a polypeptide containing

XX CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

XX CC that induces an immunogenic response against residues 1-3 to 7-11 of

XX CC Abeta. The products of the invention have neurotropic and neuroprotective

XX CC activity. The method is also useful for monitoring a course of treatment

XX CC being administered to a patient e.g. active and passive immunization. The

XX CC methods are useful for prophylactic and therapeutic treatment of

XX CC Alzheimer's disease

XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 16

AAB68637

ID AAB68637 standard; peptide; 21 AA.

AC AAB68637;

DT 30-APR-2001 (first entry)

DE HER-2 B cell peptide P30.

KW Cytostatic; immune response; HER-2; human; epitope; cancer; breast;

KW ovarian; lung; prostate; colon.

OS Unidentified.

XX WO200108636-A2.

PN 08-FEB-2001.

XX 03-AUG-2000; 2000WO-US021222.

XX 03-AUG-1999; 99US-0146869P.

PA (OHIS) UNIV OHIO STATE.

PI Kaumaya PT, Stevens VC, Triozzi PL;

XX WPI; 2001-182849/18.

DR Compositions comprising polypeptides and polynucleotides for stimulating

PT the immune system and for treating malignancies associated with

PT overexpression of the HER-2 protein.

XX Claim 4; Page 38; 51pp; English.

XX The present invention relates to compositions for stimulating the immune

XX system and for treating malignancies associated with overexpression of

XX the HER-2 protein. The compositions comprise immunogenic groups of the

XX HER-2 proteins. The present sequence is one such peptide used in the

XX compositions of the present invention. The compositions can be used for

XX treating cancer, e.g. breast, ovarian, lung, prostate and colon cancers

XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 17

AAB61958

ID AAB61958 standard; peptide; 21 AA.

AC AAB61958;

XX 14-MAY-2001 (first entry)

DE Tetanus Toxoid universal Th epitope TT947.

KW Fcalpha receptor; epidermal growth factor; EGF; HER2 receptor; tumour;

KW immune thrombocytopenia purpura; systemic lupus erythematosus; vaccine;

KW cytosstatic; antiviral; protozoacide; antifungal; immunosuppressive;

KW antiinflammatory; dermatological; hemostatic; tetanus toxoid.

XX Clostridium tetani.

OS WO200109186-A2.

PN 08-FEB-2001.

XX 25-JUL-2000; 2000WO-US020158.

XX 30-JUL-1999; 99US-00364088.

PR 10-MAR-2000; 2000US-00523279.

XX (MEDA-) MEDAREX INC.

XX Deo YM, Goldstein J, Graziano R, Keller T;

PI WPI; 2001-123318/13.

DR Bispecific molecule comprising specific binding sites for an Fc-alpha

PT receptor and an epidermal growth factor, used to induce effector cell

PT killing of tumor cells.

XX Example 7; Fig 24; 183pp; English.

XX The invention relates to a bispecific molecule (I) comprising specific

XX binding sites for an Fcalpha receptor and an epidermal growth factor

XX (EGF) receptor. It also provides bispecific molecule (II) comprising a

XX human antibody, preferably a single chain antibody, specific for an

XX Fcalpha receptor, linked to EGF; a bispecific molecule (III) comprising

XX specific binding sites for an Fcalpha receptor and a HER2 receptor; (3) a

XX multispecific molecule (IV) comprising specific binding sites for Fcalpha

XX receptor, HER2 receptor and EGF receptor; (4) a multispecific molecule

XX (V) comprising a human antibody specific for an Fcalpha receptor, a human

XX antibody specific for a HER2 receptor; and EGF. (I)-(V) can be used for

XX inducing effector cell killing of tumor cells. The molecules can be used

XX to treat or prevent viral, protozoal, or fungal infections, or autoimmune

XX diseases such as immune thrombocytopenia purpura and systemic lupus

XX erythematosus. The present sequence represents a wild-type tetanus toxoid

XX epitope TT947

XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 18
 AAB20144
 ID AAB20144 standard; peptide; 21 AA.
 AC AAB20144;
 DT 30-APR-2001 (first entry)
 DE Tetanus toxin T-cell epitope P30.
 KW Tetanus toxin; T-cell epitope; growth differentiation factor 8; GDF-8;
 KW myostatin; down-regulation; vaccine; muscle; meat; cachexia; cardiant.
 OS Clostridium tetani.
 PN WO200105820-A2.
 XX
 PD 25-JAN-2001.
 PF 20-JUL-2000; 2000WO-DK000413.
 PR 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-014527SP.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 PI Halkier T, Mouritsen S, Klyener S;
 XX
 DR WPI; 2001-112680/12.
 XX
 PT Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 PS Disclosure; Page 95; 110pp; English.
 XX
 CC The present sequence is that of the promiscuous tetanus toxic T-cell
 CC epitope P30. It is an object of the invention to produce a recombinant
 CC therapeutic vaccine capable of effecting down-regulation of growth
 CC differentiation factor 8 (GDF-8) in order to increase the muscle growth
 CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are provided
 CC that are capable of breaking autotolerance against autologous GDF-8.
 CC These comprise the C-terminal portion of human GDF-8 in which a portion
 CC of the native sequence is replaced by a T-cell epitope such as the
 CC promiscuous tetanus toxin T-cell epitope P2 or P30. The high number of
 CC Cys residues in the C-terminal region limits the possible sites in which
 CC the T-cell epitope can be positioned without major disturbance of the
 CC native 3-dimensional structure of the protein. Nucleic acids encoding the
 CC GDF-8 variants can be used for genetic immunisation of the animals. Down-
 CC regulation of GDF-8 activity can increase muscle mass by up to at least
 CC 45% in cattle, pigs and poultry used for meat production, reducing the
 CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
 CC treat human diseases such as cancer cachexia where muscle atrophy is
 CC pronounced and for patients suffering from acute and chronic heart
 CC failure
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 19
 AAB85453
 ID AAB85453 standard; peptide; 21 AA.
 AC AAB85453;
 XX
 DT 29-OCT-2001 (first entry)
 DE Amino acid sequence of P30 epitope.
 KW Multivalent protein; immune response; Plasmodium vivax; parasite;
 KW protozoas; vaccine; malaria; recombinant; Vivaci; ViVac2.
 XX
 PS Plasmodium vivax.
 XX
 DT 25-SEP-2001 (first entry)
 DE Universal tetanus toxin Th epitope TT947-967.
 KW HER 2/neu; epidermal growth factor receptor; EGFR; multispecific protein;
 KW Fc receptor; FcR; tumor cell; breast; cancer; sarcoma; carcinoma; HIV;
 KW pathogenic; Toxoplasma gondii; candidiasis; systemic lupus; cytostatic;
 KW immune thrombocytopenia purpura; immunosuppressive; antiviral;
 KW antifungal; antiprotozoal; tetanus toxin.
 XX
 OS Clostridium tetani.
 PN US6270765-B1.
 XX
 PD 07-AUG-2001.
 PF 06-NOV-1998; 98US-00188082.
 PR 07-JUN-1995; 95US-00484172.
 PR 07-JUN-1996; 96US-00661052.
 XX
 PA (MEDA-) MEDAREX INC.
 XX
 PI Deo YM, Goldstein J, Graziano R, Somasundaram C;
 XX
 DR WPI; 2001-475189/51.
 XX
 PT Inducing killing of tumor cells which expresses HER 2/neu or epidermal
 PT growth factor receptor (EGFR) by contacting the cell with multispecific
 PT proteins comprising an anti-Fc receptor, -Her 2/neu or -EGFR antibody,
 PT useful for treating cancer.
 XX
 PS Example 7; Col 29; 57pp; English.
 XX
 CC The invention relates to a new method for inducing killing of a tumor
 CC cell which expresses HER 2/neu or epidermal growth factor receptor
 CC (EGFR). The method comprises contacting the tumor cell with a
 CC multispecific protein comprising a component, preferably an antibody,
 CC which binds to an Fc receptor (FcR), Her 2/neu or EGFR. The method is
 CC useful for inducing killing of a tumor cell from breast cancer, sarcoma,
 CC carcinoma, or ovarian cancer. Specific multispecific proteins can also be
 CC administered to a subject to treat or prevent other diseases or
 CC conditions, including pathogenic infections (e.g., viral (such as HIV)),
 CC protozoan infections (such as Toxoplasma gondii), fungal infections (such
 CC as candidiasis), and an autoimmune (e.g., immune thrombocytopenia
 CC purpura and systemic lupus). The present sequence represents an universal
 CC tetanus toxin Th epitope TT947-967
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 20
 AAB85702
 ID AAB85702 standard; peptide; 21 AA.
 AC AAB85702;
 XX
 DT 29-OCT-2001 (first entry)
 DE Amino acid sequence of P30 epitope.
 KW Multivalent protein; immune response; Plasmodium vivax; parasite;
 KW protozoas; vaccine; malaria; recombinant; Vivaci; ViVac2.
 XX
 PS Plasmodium vivax.
 XX

XX WO200155181-A2.
 XX 02-AUG-2001.
 XX 29-JAN-2001; 2001WO-US002937.
 XX 31-JAN-2000; 2000US-0179213P.
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX Lal AA, Xiao L, Zhou Z;
 XX WPI; 2001-514557/56.
 XX New recombinant multivalent protein comprising antigenic determinants
 PT derived from more than one stage in a life cycle of Plasmodium vivax,
 PT useful as a vaccine for treating, preventing and reducing malarial
 PT infection.
 XX Example 1; Page 25; 59pp; English.
 XX The invention relates to recombinant multivalent proteins (I) that
 CC stimulate an immune response to Plasmodium vivax. (I) comprises antigenic
 CC determinants, fragments or conservative substitutions, derived from more
 CC than one stage in a life cycle of a Plasmodium vivax parasite. (I) is
 CC useful as a vaccine for stimulating an immune response, specifically a
 CC protective immune response that confers increased resistance to infection
 CC by Plasmodium parasites, such as P. vivax. (I) is especially useful in
 CC the treatment, prevention and reduction of malarial infection, as
 CC research or diagnostic reagents for the detection of Plasmodium species
 CC in a biological sample, and for conferring immunity against multiple
 CC stages of the malarial parasite. The antibodies produced are useful for
 CC the detection or measurement of antigenic epitopes derived from one or
 CC more stages in a life cycle of a parasite, particularly P. vivax. The
 CC vaccine comprising the recombinant proteins, is cost-effective, health-
 CC promoting intervention for controlling, preventing or treating the
 CC incidence of malaria. The present sequence represents the amino acid
 CC sequence of a p30 epitope, a component of the multivalent and multistage
 CC proteins vivacp and ViVac2p
 XX Sequence 21 AA;
 SQ

Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 21
 ABG31775
 ID ABG31775 standard; peptide; 21 AA.
 XX
 AC ABG31775;
 XX 03-DEC-2002 (first entry)
 DT
 XX T helper cell epitope #2.
 DE
 XX Immunogen; B-cell epitope; cytotoxic T lymphocyte; CTL; TH epitope;
 KW T helper cell epitope; virtual lymph node device.
 XX Clostridium tetani.
 OS
 XX WO200266056-A2.
 XX 29-AUG-2002.
 PD
 XX 19-FEB-2002; 2002WO-DK000112.
 XX

PR 19-FEB-2001; 2001WO-DK000113.
 PR 20-FEB-2001; 2001US-00785215.
 PR 20-AUG-2001; 2001DK-00001231.
 PR 22-OCT-2001; 2001US-0337543P.
 XX (PHAR-) PHARMEXA AS.
 XX Nielsen KG, Koefoed P;
 XX WPI; 2002-706932/76.
 XX Novel immunogen useful for immunizing an animal, has an activated
 PT polyhydroxypolymer backbone to which is attached an antigenic determinant
 PT including a B cell epitope and another determinant including a T-helper
 PT epitope.
 XX Example 1; Page 51; 52pp; English.
 XX The invention relates to an immunogen comprising at least one first
 CC antigenic determinant that includes at least one B-cell epitope and/or at
 CC least one cytotoxic T lymphocyte (CTL) epitope, and at least one second
 CC antigenic determinant that includes a T helper cell epitope (TH epitope),
 CC where each of the first and second antigenic determinants are coupled to,
 CC an activated polyhydroxypolymer carrier. The invention also relates to an
 CC immunogenic composition for raising an immune response against an antigen
 CC in a mammal, including a human. The immunogen or immunogenic composition
 CC contained in a virtual lymph node (VLN) device is useful for immunising
 CC an animal, including a human, against an antigen of choice, where the
 CC antigen shares at least one first antigenic determinant with the
 CC immunogen. This sequence represents a T helper cell epitope used in
 CC synthesis of an immunogen of the invention
 XX Sequence 21 AA;
 SQ

Query Match 100.0%; Score 112; DB 5; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 22
 AAU11415
 ID AAU11415 standard; peptide; 21 AA.
 XX
 AC AAU11415;
 XX 12-MAR-2002 (first entry)
 DT
 XX Tetanus toxoid precursor peptide, tentoxylisin, #2.
 DE
 XX Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer;
 KW Tetanus toxoid precursor peptide; tentoxylisin.
 XX Clostridium tetani.
 OS
 XX WO200195763-A2.
 XX 15-NOV-2001.
 PD
 XX 04-MAY-2001; 2001WO-US014363.
 XX 05-MAY-2000; 2000US-0202328P.
 XX (APHT-) APHTON CORP.
 XX Grimes S, Michaeli D, Stevens VC;
 PI

XX WPI; 2002-049440/06.
 XX
 PT Novel synthetic immunogen for inducing immune response against
 PT gonadotropin releasing hormone, comprises fusion peptide having
 PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 PT or its analog.
 XX
 XX Disclosure; Page 29; 43pp; English.
 XX
 CC The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone (LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and
 CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is Tetanus
 CC toxoid precursor peptide, tentoxylisin, a promiscuous helper T-cell
 CC peptide epitope used in the immunogen of the invention
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 5; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVVKVSASHLE 21
 DB 1 FNNFTVSFVLRVVKVSASHLE 21
 RESULT 23
 ABP72695
 ID ABP72695 standard; peptide; 21 AA.
 XX
 AC ABP72695;
 XX
 XX 11-JUN-2003 (first entry)
 DT
 DE Tetanus toxoid T cell epitope P30.
 XX
 XX Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN W02003015812-A2.
 XX
 PD 27-FEB-2003.
 XX
 PF 20-AUG-2002; 2002WO-DK000547.
 XX
 PR 20-AUG-2001; 2001DK-00001231.
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan PD;
 PI WPI; 2003-312718/30.
 XX
 DR N-PSDB; ABZ81993.
 DR
 XX Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.

XX Disclosure; Page 120; 122pp; English.
 XX
 CC The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P30. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P30 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVVKVSASHLE 21
 DB 1 FNNFTVSFVLRVVKVSASHLE 21
 RESULT 24
 ADA25170
 ID ADA25170 standard; peptide; 21 AA.
 XX
 AC ADA25170;
 XX
 XX 20-NOV-2003 (first entry)
 DT
 DE C. tetani T-cell epitope #4.
 XX
 KW fimbrin; non-typable Haemophilus influenzae; NTHi infection;
 KW otitis media; epitope; immunogenic.
 XX
 OS Clostridium tetani.
 XX
 PN US6436405-B1.
 XX
 PD 20-AUG-2002.
 XX
 PF 04-SEP-1998; 98US-00148711.
 XX
 PR 02-JUN-1995; 95US-00460502.
 XX
 XX (OHIS) UNIV OHIO STATE.
 PA
 XX Bakaletz LO, Kaumaya PTP;
 PI WPI; 2003-615247/58.
 XX
 DR Synthetic chimeric fimbrin peptide, useful for treating Haemophilus
 PT influenzae infections.
 XX
 XX Claim 6; Col 4; 16pp; English.
 XX
 CC The invention relates to a synthetic chimeric fimbrin peptide. The
 CC peptide is useful for treating a non-typable Haemophilus influenzae
 CC (NTHi) infection and otitis media. The synthetic peptides do not require
 CC tedious purification techniques. The present sequence represents the
 CC amino acid sequence of a Clostridium tetani T-cell epitope #4.
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21
 Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 25

AAO30455
 ID AAO30455 standard; peptide; 21 AA.

XX AAO30455;

DT 22-SEP-2003 (first entry)

DE Tetanus toxoid epitope (P30) peptide.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; epitope;
 KW tetanus toxoid.

XX Unidentified.

OS WO2003042244-A2.

PN 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

PR 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.

PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.

PA (VOLD/) VOLDORGB B.

PA (MOUR/) MOURITSEN S.

XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

PI WPI; 2003-449558/42.

DR N-PSDB; AAL61291.

XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

PS Example 2; Page 107; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a tetanus toxoid epitope peptide.
 CC This sequence is used to illustrate the method of the invention

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 6; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21

Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 26

ABR82483

ID ABR82483 standard; peptide; 21 AA.

XX ABR82483;

DT 20-NOV-2003 (first entry)

XX Tetanus toxoid P30 epitope sequence.

DE CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; tetanus toxoid; p2; p30; antigen.

XX Clostridium tetani.

OS WO2003059379-A2.

PN 24-JUL-2003.

PD 17-JAN-2003; 2003WO-DK000031.

PF 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

PA Klysner S, Voldborg B;

PI WPI; 2003-587260/55.

DR 17-JAN-2002; 2002US-0350047P.

XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

XX Disclosure; Page 140; 140pp; English.

PS The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a tetanus toxoid (TT)
 CC P30 epitope that can be introduced into a CEA polypeptide sequence

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 7; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21

Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 27

ADCO9977

ID ADCO9977 standard; peptide; 21 AA.

XX ADCO9977;

XX 18-DEC-2003 (first entry)

DE Tetanus toxoid TT947-967, universal T-cell epitope.

XX BCG; T-cell; epitope; gastrointestinal; antiulcer.

XX Clostridium tetani.

OS WO2003072040-A2..

PN 04-SEP-2003.

XX 25-FEB-2003; 2003WO-US005421.

XX 25-FEB-2002; 2002US-0360134P.

PR 23-APR-2002; 2002US-0374501P.
 PA (ELAN-) ELAN PHARM INC.
 XX Taylor J, Yednock TA;
 PI WPI; 2003-712654/67.
 DR Preventing and/or reducing pathological inflammation by administration of
 XX an agent inhibiting alpha-4 integrin or its dimer, useful in treating
 PT multiple sclerosis, Crohn's disease, ulcerative colitis or inflammatory
 PT bowel disease.
 PT Disclosure; Page 17; 89pp; English.
 XX
 CC The present sequence is that of a universal T-cell epitope comprising
 CC amino acids 947-967 of tetanus toxoid. Universal T-cell epitopes such as
 CC this can be used as carriers of peptide agents of the invention that bind
 CC alpha-4 integrin or a dimer comprising an alpha-4 integrin subunit.
 CC Linkage to a carrier will improve the immune response to a peptide that
 CC may be too small to be immunogenic on its own. A method of chronically
 CC reducing a patient's pathological inflammation involves administration of
 CC an agent that specifically binds to an alpha-4 integrin or a dimer
 CC comprising alpha-4 integrin. The agent is administered chronically for at
 CC least 6 months, preferably at least 12 months. The administration
 CC maintains alpha-4 integrin receptor saturation to chronically suppress
 CC pathological inflammation in the patient. The pathological inflammation
 CC is caused by inflammatory disease of the gastrointestinal tract, such as
 CC Crohn's disease, ulcerative colitis or inflammatory bowel disease, or is
 CC caused by multiple sclerosis (all claimed).
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 29
 ADC89659
 ID ADC89659 standard; peptide; 21 AA.
 XX
 AC ADC89659;
 DT 01-JAN-2004 (first entry)
 DE C. tetani T cell epitope #4.
 XX Fimbrin; T cell epitope; vaccine; otitis media; auditory;
 KW antiinflammatory.
 XX Clostridium tetani.
 OS US2003113344-A1.
 PN 19-JUN-2003.
 XX 19-AUG-2002; 2002US-00223711.
 PF 04-SEP-1998; 98US-00148711.
 PR (BAKA/) BAKALETZ L O.
 PA (KAUM/) KAUMAYA P T P.
 XX Bakaletz LO, Kaumaya PTP;
 PI WPI; 2003-810881/76.
 DR Novel synthetic chimeric fimbrin peptide LB1 or LB2 comprising a first

PT peptide unit, T cell epitope as second peptide unit and third linker
 PT peptide unit, useful for preventing or reducing severity of otitis media.
 XX Claim 10; SEQ ID NO 8; 15pp; English.
 XX
 CC The invention relates to a synthetic chimaeric fimbrin peptide LB1 or LB2
 CC comprises a first peptide unit derived from H. influenzae fimbrin, a
 CC second peptide unit containing a T cell epitope and a third linker
 CC peptide which connects the first peptide to the second. The chimaeric
 CC peptide is useful for inducing an immune response in animals against non-
 CC typable Haemophilus influenzae (NTHi) and for preventing or reducing the
 CC adherence of NTHi to host cells thereby preventing or reducing the
 CC severity of otitis media. The present sequence is a clostridium tetani T
 CC cell epitope for use in the chimaeric peptides of the invention.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 29
 ADC81610
 ID ADC81610 standard; peptide; 21 AA.
 XX
 AC ADC81610;
 DT 01-JAN-2004 (first entry)
 DE Tetanus toxoid P30 epitope SEQ ID NO:3.
 XX pain reduction; nociceptive; nociceptor; immune response;
 KW tumour necrosis factor alpha; TNFalpha; analgesic; vaccine; pain;
 XX neuropathic pain; tetanus toxoid; epitope.
 OS Synthetic.
 OS Clostridium tetani.
 XX WO2003075951-A2.
 PN 18-SEP-2003.
 PD 11-MAR-2003; 2003WO-DK000147.
 PF 11-MAR-2002; 2002DK-00000368.
 PR 11-MAR-2002; 2002US-0363128P.
 XX (PHAR-) PHARMEXA AS.
 PA Pedersen HR, Ebert B, Pedersen LH, Rasmussen PB;
 XX WPI; 2003-748335/70.
 DR Reducing pain or increasing the threshold for nociception in an
 XX individual comprises administering an agent capable of inducing an active
 PT immune response that targets the individual's autologous tumor necrosis
 PT factor alpha.
 XX Disclosure; SEQ ID NO 3; 120pp; English.
 XX
 CC The present invention describes a method for reducing pain or increasing
 CC the threshold for nociception in an individual comprising administering
 CC an agent capable of inducing an active immune response that targets the
 CC individual's autologous tumour necrosis factor alpha (TNFalpha). The
 CC agent has analgesic activity, and can be used in a vaccine against
 CC autologous TNFalpha. The method is useful in reducing pain or increasing
 CC the threshold for nociception in an individual. The method is especially
 CC intended for reducing neuropathic pain. The present sequence represents a

CC tetanus toxoid P30 epitope, which is given in the exemplification of the
 CC present invention.
 XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 30

ADD71439
 ID ADD71439 standard; peptide; 21 AA.

XX
 AC ADD71439;

XX
 DT 15-JAN-2004 (first entry)

XX
 DE HLA-DP4 binding peptide ligand #1.

XX
 KW cytostatic; immunostimulant; immunosuppressive; neuroprotective;
 KW antidiabetic; anti-allergic; ligand; HLA-DP4; human leukocyte antigen;
 KW immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
 KW diabetes; allergy; graft rejection.

XX
 OS Synthetic.

XX
 FN FR2830940-A1.

XX
 PD 18-APR-2003.

XX
 PF 17-OCT-2001; 2001FR-00013352.

XX
 PR 17-OCT-2001; 2001FR-00013352.

XX
 PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE.

XX
 PA (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.

XX
 PI Mallere B, Castelli F, Buhot C, Georges B;

XX
 DR WPI; 2003-395920/38.

XX
 PT Process for selecting ligands for human leukocyte antigen DP4, useful as
 PT immunomodulators for treating e.g. tumors, based on inhibition of
 PT binding.

XX
 PS Claim 5; SEQ ID NO 1; 70pp; French.

XX
 CC The invention relates to a process for selecting ligands (A) of HLA
 CC (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
 CC with a labelled peptide (I) in presence of different concentrations of
 CC test compounds; (b) separating complexes formed; (c) determining DP4-(I)
 CC complexes by measuring a signal from the label; and (d) selecting
 CC compounds having binding IC50 less than 1000 nM, corresponding to the
 CC concentration required to inhibit 50 % binding of (I). (I) has signal-to-
 CC noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
 CC activation of T cells, or their anergy. (A), or nucleic acid that encodes
 CC them, are useful as immunomodulators, including uses in vaccines against
 CC pathogens and tumor cells, also for treating autoimmune diseases
 CC (multiple sclerosis and type I diabetes), allergy and graft rejection.
 CC (A) are useful as reagents for diagnosing the immune status of an
 CC individual, while labelled complexes of DP4 with (A) are used to select
 CC antigen-specific CD4+ T cells. The method identifies ligands specific for
 CC HLA-DP4 and allows exact definition of the binding motif shared by DP4
 CC binding ligands. This sequence represents an example of a peptide ligand
 CC of the invention. The peptides are labelled (biotinylated) at their N-
 CC termini.

XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 31

AAO24396
 ID AAO24396 standard; peptide; 21 AA.

XX
 AC AAO24396;

XX
 DT 06-MAY-2004 (first entry)

XX
 DE HLA-A24-restricted cancer antigen peptide related peptide #31.

XX
 KW Human; mouse; HLA-A24-restricted cancer antigen; antigen; cancer;
 KW tumour suppressor protein; cytostatic; WT1; vaccine.

XX
 OS Synthetic.

XX
 FN WO2003106682-A1.

XX
 PD 24-DEC-2003.

XX
 PF 12-JUN-2003; 2003WO-JP007463.

XX
 PR 12-JUN-2002; 2002JP-00171518.

XX
 PR 20-SEP-2002; 2002JP-00275572.

XX
 PA (CHUS) CHUGAI SEIYAKU KK.

XX
 PA (SUMU) SUMITOMO PHARM CO LTD.

XX
 PA (SUGI/) SUGIYAMA H.

XX
 PI Sugiyama H, Gotoh M, Takasu H;

XX
 DR WPI; 2004-090846/09.

XX
 PT Antigenic peptides derived from WT1 which induce HLA-A24 restricted
 PT cytotoxic T-lymphocytes for production of cancer vaccine and treatment
 PT and prevention of cancer.

XX
 PS Example 1; Page 88; 0pp; Japanese.

XX
 CC The present invention relates to antigenic peptides derived from tumour
 CC suppressor protein WT1 which induce HLA-A24 restricted cytotoxic T-
 CC lymphocytes. The peptides can be used in the preparation of cancer
 CC vaccine for treatment and prevention of cancer, including leukaemia,
 CC multiple myeloma, lymphoma, and cancer of the stomach, colon, breast,
 CC liver, ovary, skin, pancreas, prostate and womb. The present sequence is
 CC a polypeptide used in the exemplification of the invention

XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 32

ADL64022
 ID ADL64022 standard; peptide; 21 AA.

XX
 AC ADL64022;

03-JUN-2004 (first entry)
Tetanus toxin P30 peptide T-cell epitope.
immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
AHR; mucus hyper-secretion; goblet cell metaplasia;
sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
dermatological; antiasthmatic; gene therapy;
chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
P30.
Clostridium tetani.
WO2004019974-A2.
11-MAR-2004.
28-AUG-2003; 2003WO-GB003703.
30-AUG-2002; 2002GB-00020212.
28-FEB-2003; 2003GB-00004672.
(GLAX) GLAXO GROUP LTD.
(ASHM/) ASHMAN C.
Ashman C, Ellis JH;
WPT; 2004-239121/22.
New immunogenic composition comprising an interleukin-13 (IL-13) element
that drives an immune response recognizing human IL-13 and foreign T-cell
epitopes, useful in treating, e.g. asthma or atopic dermatitis.
Disclosure; Page 13; 89pp; English.
This invention relates to a novel immunogenic composition comprising an
IL-13 (interleukin-13) element that is capable of driving an immune
response by recognising human IL-13 and one or more foreign T-cell
epitopes. Specifically, it refers to a method for producing a human
chimeric IL-13 immunogen formulated in an appropriate manner to generate
a human vaccine. The present invention describes human chimeric IL-13
sequences as having a similar conformational shape to native human IL-13
while having sufficient amino acid sequence diversity, attributable to
non-human mammalian species, to enhance its immunogenicity. Accordingly,
the method results in a reduction in airway hyper-responsiveness (AHR),
mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
the airways and skin irritation, as well as reducing the requirement for
inhaled corticosteroids (ICS). As such, these compositions, which exhibit
dermatological and antiasthmatic activities, can be used via gene therapy
to treat individuals suffering from or susceptible to chronic obstructive
pulmonary disease (COPD), asthma or atopic dermatitis. This peptide
sequence is a T-cell peptide epitope fused to IL-13 to create an
immunogen of the invention.

Query Match 100.0%; Score 112; DB 8; Length 21;
Best Local Similarity 100.0%; Pred. No. 7.8e-12;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | |
Db 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | |
RESULT 33
ADL63947
ID ADL63947 standard; peptide; 21 AA.
XX
AC ADL63947;
XX
DT 03-JUN-2004 (first entry)
XX
DE Tetanus toxin P30 T-cell epitope, SEQ ID NO:34.
XX Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; eaponin;
KW

Tetanus toxin P30 peptide T-cell epitope.
immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
AHR; mucus hyper-secretion; goblet cell metaplasia;
sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
dermatological; antiasthmatic; gene therapy;
chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
P30.
Clostridium tetani.
WO2004019975-A2.
11-MAR-2004.
28-AUG-2003; 2003WO-GB003729.
30-AUG-2002; 2002GB-00020211.
28-FEB-2003; 2003GB-00004672.
(GLAX) GLAXO GROUP LTD.
Ellis JH, Ashman C;
WPI; 2004-239122/22.
New vaccine composition useful for treating asthma, Chronic obstructive
pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
immunogen generating an immune response against interleukin-13.
Disclosure; Page 14; 89pp; English.
This invention relates to a novel immunogenic composition comprising an
IL-13 (interleukin-13) element that is capable of driving an immune
response by recognising human IL-13 and one or more foreign T-cell
epitopes. Specifically, it refers to a method for producing a human
chimeric IL-13 immunogen formulated in an appropriate manner to generate
a human vaccine. The present invention describes human chimeric IL-13
sequences as having a similar conformational shape to native human IL-13
while having sufficient amino acid sequence diversity, attributable to
non-human mammalian species, to enhance its immunogenicity. Accordingly,
the method results in a reduction in airway hyper-responsiveness (AHR),
mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
the airways and skin irritation, as well as reducing the requirement for
inhaled corticosteroids (ICS). As such, these compositions, which exhibit
dermatological and antiasthmatic activities, can be used via gene therapy
to treat individuals suffering from or susceptible to chronic obstructive
pulmonary disease (COPD), asthma or atopic dermatitis. This peptide
sequence is a T-cell peptide epitope fused to IL-13 to create an
immunogen of the invention.

Query Match 100.0%; Score 112; DB 8; Length 21;
Best Local Similarity 100.0%; Pred. No. 7.8e-12;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | |
Db 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | |
RESULT 34
ADL97909
ID ADL97909 standard; peptide; 21 AA.
XX
AC ADL97909;
XX
DT 03-JUN-2004 (first entry)
XX
DE Tetanus toxin P30 T-cell epitope, SEQ ID NO:34.
XX Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; eaponin;
KW

KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; T-helper epitope;
 KW tetanus toxin; P30.
 XX Clostridium tetani.
 OS WO2004019979-A2.
 PN 11-MAR-2004.
 PD 28-AUG-2003; 2003WO-GB003721.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAXO) GLAXO GROUP LTD.
 PA Ellis JH, Ashman C;
 XX WPI; 2004-239126/22.
 DR Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX Disclosure; SEQ ID NO 34; 45pp; English.
 XX The invention relates to a vaccine composition for treating asthma or
 CC COPD (chronic obstructive pulmonary disease). The vaccine composition
 CC comprises an immunogen that is capable of generating an immune response
 CC against self interleukin-13 (IL-13) and an adjuvant composition
 CC comprising a combination of an immunostimulatory oligonucleotide
 CC containing at least one unmethylated CG motif and a saponin. The IL-13
 CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
 CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
 CC epitopes. The vaccine composition is useful for treating asthma or COPD,
 CC or atopic disorders such as hayfever, contact allergies or dermatitis.
 CC The present sequence represents a heterologous T-cell epitope which may
 CC be incorporated into an IL-13 immunogen of the invention.
 XX Sequence 21 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 35
 ADM06895
 ID ADM06895 standard; protein; 21 AA.
 XX ADM06895;
 AC 17-JUN-2004 (first entry)
 DT Tetanus toxin P30 epitope, SEQ ID NO:8.
 DE Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; tetanus toxin; P30 epitope;
 KW T-cell epitope.
 XX Clostridium tetani.
 OS WO2004024183-A1.
 XX 01-APR-2004.

PD 25-MAR-2004.
 XX 12-SEP-2003; 2003WO-DK000592.
 PF 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX (PHAR-) PHARMEXA AS.
 PA Boving TEG, Klyser S;
 XX WPI; 2004-329403/30.
 DR Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX Example 2; SEQ ID NO 8; 83pp; English.
 XX The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting a
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents the tetanus toxin P30
 CC epitope, a promiscuous T-cell epitope, which may be used in ghrelin
 CC analogues of the invention.
 XX Sequence 21 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 36
 ADO43876
 ID ADO43876 standard; peptide; 21 AA.
 XX ADO43876;
 AC 15-JUL-2004 (first entry)
 DT Amino acid sequence of synthetic peptide #1.
 DE Human; WPI; CTL induction; cancer vaccine; stomach cancer;
 KW prostate cancer; ovarian cancer.
 KW Synthetic.
 OS WO2004026897-A1.
 PN 01-APR-2004.

PF 19-SEP-2003; 2003WO-JP011974.
 PR 20-SEP-2002; 2002JP-00275264.
 XX (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 XX (SUGI/) SUGIYAMA H.
 PI Sugiyama H, Gotoh M, Takasu H, Samizo F, Kusunose N, Nakatsuka M;
 XX WPI; 2004-295379/27.
 DR Novel WT1 substitution peptides with cysteine replaced by specific amino
 PT acid residue and their encoded polynucleotide for cancer vaccines with
 PT CTL induction activity for treatment of e.g. stomach cancer and prostate
 PT cancer.
 XX
 PS Disclosure; Page 18; 65pp; Japanese.
 XX
 CC The specification describes WT1 substitution peptides, in which a
 CC cysteine residue is substituted with another amino acid residue. The WT1
 CC substitution peptides have CTL induction activity. Peptides of the
 CC invention are used in cancer vaccines, which are applicable in the
 CC treatment of e.g. stomach cancer, prostate cancer and ovarian cancer. The
 CC present peptide represents a peptide that is mentioned in the
 CC specification.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVVKVSASHLE 21
 DB 1 FNNFTVSFWLRVVKVSASHLE 21
 RESULT 37
 ADP02877
 ID ADP02877 standard; peptide; 21 AA.
 XX
 AC ADP02877;
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 947-967.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 DR
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.

XX Disclosure; SEQ ID NO 10; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to amino acids 947-967
 CC of the tetanus toxoid protein used in the method of the invention.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVVKVSASHLE 21
 DB 1 FNNFTVSFWLRVVKVSASHLE 21
 RESULT 38
 ADP02884
 ID ADP02884 standard; peptide; 21 AA.
 XX
 AC ADP02884;
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 947-967 for fusion protein.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 DR
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 17; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response

CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
 CC peptide corresponding to amino acid 947-967 used in the method of the
 CC invention.

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 39
 ADO24821

ID ADO24821 standard; peptide; 21 AA.

XX ADO24821;

DT 12-AUG-2004 (first entry)

XX Tetanus toxoid peptide #2 for carbohydrate dendrimer conjugate.

XX antibacterial; virucide; fungicide; hepatotropic; anti-HIV; cytostatic;
 KW vaccine; bacterial adhesion inhibitor; toxin action inhibitor;
 KW carbohydrate dendrimer; immunomodulating substance; HIV; hepatitis;
 KW influenza; fungal disease; cancer; carcinoma; melanoma; poliovirus.

XX Clostridium tetani.

OS WO2004041310-A1.

XX 21-MAY-2004.

XX 07-NOV-2003; 2003WO-DK000766.

XX 08-NOV-2002; 2002DK-00001724.

XX (DAFO-) DANMARKS FODEVARE OG VETERINAERFORSKNING.

XX Heegaard P, Boas U;

XX WPI; 2004-419632/39.

XX Synthesizing chemoselectively carbohydrate dendrimer conjugate having
 PT carbohydrate residue and immunomodulating substance, by identifying
 PT chemoselective and carbohydrate residue, and binding residues to
 PT dendrimer.

PS Disclosure; Page 20; 81pp; English.

XX The invention relates to a method of synthesizing chemoselectively a
 CC carbohydrate dendrimer (CD) conjugate having a specific structure
 CC containing a functional dendrimer, a residue of a carbohydrate, and a
 CC residue of an immunomodulating substance. (CD) is useful in the
 CC production of antibodies, as a targeting compound, in medicine, in
 CC inhibition of bacterial adhesion, inhibition of toxin action such as e.g.
 CC glycosphingolipid-specific VT2 toxins and other such bacterial toxins
 CC with binding activities toward cell-surface carbohydrates of the host, or
 CC inhibition of carbohydrate-mediated virus entry into host cells, in
 CC diagnostic assays, in assays for the detection of antibodies against E,
 CC and in high-throughput screening. (CD) are useful for treating and/or
 CC preventing bacterial diseases such as e.g. infection with bacteria, viral
 CC diseases such as infection with HIV, hepatitis or influenza, fungal
 CC diseases and certain types of cancer such as carcinomas or melanomas. The
 CC method enables fast and efficient synthesis of dendrimer conjugates
 CC having a well-defined chemical structure. This sequence corresponds to a

CC tetanus toxoid peptide sequence used in the method of the invention.
 XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 40
 ADP04308

ID ADP04308 standard; peptide; 21 AA.

XX ADP04308;

XX 09-SEP-2004 (first entry)

XX Tetanus toxoid p30 peptide SEQ ID NO:1.

XX T-cell; antigen; antigen presenting cell; APC; CD4+; CD8+; virucide;
 KW antibacterial; protozoacide; cytostatic; cell therapy; tetanus toxoid;
 KW p30.

XX Synthetic.

XX WO2004053113-A1.

XX 24-JUN-2004.

XX 09-DEC-2003; 2003WO-AU001647.

XX 09-DEC-2002; 2002AU-00953238.

XX (ORDE-) ORDER OF SISTERS OF MERCY IN QUEENSLAND.

XX Hart DNJ, Turtle CJ;

XX WPI; 2004-468864/44.

XX Generating a population of T-cells specific for an antigen comprises co-
 PT incubating the substantially mature APC population with a population of
 PT CD4+ T-cells, a population of CD8+ T-cells and a target antigen.

XX Example 1; SEQ ID NO 1; 50pp; English.

XX The invention relates to a novel method of generating a population of T-
 CC cells specific for an antigen comprising isolating a population of
 CC substantially mature antigen presenting cells (APC), co-incubating the
 CC substantially mature APC population with a population of CD4+ T-cells, a
 CC population of CD8+ T-cells and a target antigen for a time and under
 CC conditions sufficient to generate CD8+ T-cells specific for the antigen.
 CC The method of the invention has virucide, antibacterial, protozoacide,
 CC and cytostatic activity, and may have a use in cell therapy. The present
 CC sequence represents tetanus toxoid p30 peptide (tt947-967).

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 41
 ADP48562

ID ADP48562 standard; peptide; 21 AA.

XX AC ADP48562;
 XX DT 09-SEP-2004 (first entry)
 XX DE
 XX DE Promiscuous T-H tetanus toxoid epitope peptide, P30.
 XX KW chimeric binding protein; immunogenic; B-cell epitope;
 KW scaffold protein structure; major histocompatibility complex; MHC;
 KW Class II; cytostatic; vaccine; cancer; promiscuous; tetanus toxoid;
 KW epitope.
 XX OS Clostridium tetani.
 XX PN WO2004052930-A2.
 XX PD 24-JUN-2004.
 XX PF 11-DEC-2003; 2003WO-DK000859.
 XX PR 11-DEC-2002; 2002DK-00001893.
 XX PR 11-DEC-2002; 2002US-0432532P.
 XX PR 12-FEB-2003; 2003DK-00000198.
 XX PR 12-FEB-2003; 2003US-0446707P.
 XX PA (PHAR-) PHARMEXA AS.
 XX PI Mouritsen S;
 XX DR WPI; 2004-468817/44.
 XX DT New chimeric binding protein comprising a B-cell epitope, a scaffold
 PT protein structure and a tolerance breaking amino acid sequence, useful in
 PT preparing a vaccine against e.g. cancer.
 XX PS Disclosure; SEQ ID NO 2; 61pp; English.
 XX CC The invention relates to a novel chimeric binding protein that is
 CC immunogenic in an animal. The chimeric binding protein binds specifically
 CC to a first receptor that binds a second receptor present in an antigen of
 CC the animal, where the chimeric binding protein has: a B-cell epitope in
 CC the form of a binding site; a scaffold protein structure, autologous in
 CC the mammal, that stabilizes the 3D conformation of the binding site; and
 CC at least one tolerance breaking amino acid sequence, which is
 CC heterologous in the animal and which binds to a major histocompatibility
 CC complex (MHC) Class II molecule in the animal. The invention further
 CC comprises: a nucleic acid fragment that encodes the chimeric binding
 CC protein; a vector carrying the nucleic acid fragment; a transformed cell
 CC carrying the vector; a composition for inducing production of antibodies
 CC against an antigen in the autologous host comprising the chimeric binding
 CC protein, nucleic acid fragment and a carrier; and down-regulating a self-
 CC antigen or a cell that displays epitopes of the self-antigen in an
 CC animal. The chimeric binding protein has cytostatic activity. The
 CC chimeric binding protein is useful in preparing a vaccine against e.g.
 CC cancer. This sequence represents a 'promiscuous' T-H tetanus toxoid
 CC epitope peptide for use in the vaccine of the invention.
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 42
 ADP90538
 ID ADP90538 standard; peptide; 21 AA.
 XX AC ADP90538;

XX DT 23-SEP-2004 (first entry)
 XX DE Tetanus toxin helper peptide SeqID 7.
 XX KW SYT-SSX; SS393; tumour antigen peptide; cancer vaccine;
 KW cytotoxic lymphocyte induction; synovial sarcoma; tumour; cytostatic;
 KW helper peptide.
 XX OS Clostridium tetani.
 XX PN JP2004180566-A.
 XX PD 02-JUL-2004.
 XX PF 03-DEC-2002; 2002JP-00350633.
 XX PR 03-DEC-2002; 2002JP-00350633.
 XX PA (SATO/) SATO N.
 XX PA (SUMU) SUMITOMO SEIYAKU KK.
 XX DR WPI; 2004-472266/45.
 XX DT Novel mutant peptide of SYT-SSX origin, useful as pharmaceutical
 PT composition of cancer vaccine for inducing cytotoxic T cells, and as
 PT diagnostic of tumor.
 XX PS Disclosure; SEQ ID NO 7; 28pp; Japanese.
 XX CC This invention relates to novel mutant peptides derived from SYT-SSX.
 CC Specifically, it refers to a peptide SS393, which is a modified tumour
 CC antigen peptide that can be used as the active ingredient in a cancer
 CC vaccine. The present invention describes the development of mutant
 CC peptides that exhibit increased binding affinity to the HLA-A24 antigen,
 CC and as such have a favourable cytotoxic lymphocyte (CTL) induction
 CC activity. Accordingly, these peptide epitopes can be used to treat
 CC patients suffering from various tumours including synovial sarcoma, and
 CC furthermore they exhibit cytostatic activities. This peptide sequence is
 CC a helper peptide derived from the tetanus toxin, given in an
 CC exemplification of the invention.
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 43
 AAB46176
 ID AAB46176 standard; peptide; 28 AA.
 XX AC AAB46176;
 XX DT 04-APR-2001 (first entry)
 XX DE Tetanus toxoid 947-967 epitope AN90550.
 XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX OS Clostridium tetani.
 XX PN WO200072880-A2.
 XX PD 07-DEC-2000.
 XX DT

PF 26-MAY-2000; 200WO-US014810.
 PR 28-MAY-1999; 99US-00322289.
 XX (NEUR-) NEURALAB LTD.
 XX Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX WPI; 2001-032104/04.
 XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 XX Disclosure; Page 31; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 28 AA;
 Query Match 100.0%; Score 112; DB 4; Length 28;
 Best Local Similarity 100.0%; Pred. No. 1.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFVLRVVKVSASHLE 21
 Db |||||
 8 FNNFTVSFVLRVVKVSASHLE 28

RESULT 44
 ADP02901
 ID ADP02901 standard; peptide; 28 AA.
 AC ADP02901;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #13 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 OS
 XX WO2004041067-A2.
 XX
 XX 21-MAY-2004.
 XX
 XX 31-OCT-2003; 2003WO-US034527.
 XX
 XX 01-NOV-2002; 2002US-0423012P.
 XX
 XX (ELAN-) ELAN PHARM INC.
 XX (REGC) UNIV CALIFORNIA.
 XX
 XX Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 XX
 XX Preventing or treating disease such as Parkinson's disease characterized

PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX
 XX Disclosure; SEQ ID NO 34; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 28 AA;
 Query Match 100.0%; Score 112; DB 8; Length 28;
 Best Local Similarity 100.0%; Pred. No. 1.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFVLRVVKVSASHLE 21
 Db |||||
 8 FNNFTVSFVLRVVKVSASHLE 28

RESULT 45
 AAY92653
 ID AAY92653 standard; peptide; 31 AA.
 XX
 AC AAY92653;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep010 - P30 inserted in hPSM insertion position 6.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 XX Peptide 6..26
 XX /label= P30
 XX
 XX WO2000020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 XX Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 117; 220pp; English.
 XX

CC AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively

XX Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 1.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 46
 AAY92654
 ID AAY92654 standard; peptide; 31 AA.
 XX
 AC AAY92654;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep011 - P30 inserted in hPSM insertion position 8.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 XX Synthetic.
 OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..26
 FT /label= P30
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 117; 220pp; English.

CC AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively

XX Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 1.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 47
 AAY92655
 ID AAY92655 standard; peptide; 31 AA.
 XX
 AC AAY92655;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep012 - P30 inserted in hPSM insertion position 10.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 XX Synthetic.
 OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..26
 FT /label= P30
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 118; 220pp; English.

AAV92650-55 are peptides designed which correspond to the P2 and P30 epitopes with 5 flanking human prostate specific membrane antigen (hPSM) amino acids in each end. The flanking amino acids correspond to the epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T cell proliferation assays, but also for ELISA or other in vitro assays. The claims detail a method for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (i.e. self-proteins), for example, hPSM, heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope (e.g. P2 and/or P30) are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively

Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
Best Local Similarity 100.0%; Pred. No. 1.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | | | |
Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 48

AA62702
ID AAR62702 standard; peptide; 32 AA.

AC AAR62702;

25-MAR-2003 (revised)
10-SEP-1995 (first entry)

LHRH-containing immunogenic peptide.

Helper T cell epitope; universal immune stimulator; invasive; hepten; vaccine; LHRH; luteinising hormone releasing hormone; prostate; androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

Synthetic.

Key Location/Qualifiers
Domain 1..22
Domain /note= "tetanus toxin helper T cell epitope"
23..32
FT /note= "LHRH hapten"

WO9425060-A1.

10-NOV-1994.

28-APR-1994; 94WO-US004832.

27-APR-1993; 93US-00057166.

14-APR-1994; 94US-00229275.

(LADD/) LADD A E.

(WANG/) WANG C Y.

(ZAMB/) ZAMB T.

Ladd AE, Wang CY, Zamb T;

WPI, 1994-357910/44.

Immunogenic luteinising hormone releasing hormone peptide(s) - that suppress LHRH activity in males and females.

XX Claim 8; Page 84; 213pp; English.
PS Synthetic immunogenic peptides are provided in which a universal immune stimulator is linked to a peptide or protein hapten containing B cell and/or cytotoxic T lymphocyte epitopes, giving a product which causes potent immune responses to the coupled peptide or protein. The stimulator consists of (A) a promiscuous helper T cell epitope (Th) which elicits an immune response to the coupled peptide in members of a heterogeneous population expressing diverse HLA phenotypes, and (B) an adjuvant peptide sequence from the invasive protein of Yersinia. Spacer amino acid sequences (e.g. Gly-Gly) can be provided between the invasin and Th domains and between the immune stimulator and hapten components. When the hapten is LHRH, then optionally the invasin domain can be omitted from the immune stimulator component. The present sequence represents an LHRH-containing, invasin-free immunogenic peptide as above which can be used as a potent vaccine for treating e.g. prostatic hyperplasia, androgen-dependent carcinoma, prostatic carcinoma, testicular carcinoma, endometriosis, benign uterine tumours, recurrent functional ovarian cysts, (severe) premenstrual syndrome or oestrogen-dependent breast cancer, or for induction of infertility. (Updated on 25-MAR-2003 to correct PN field.)

Sequence 32 AA;

Query Match 100.0%; Score 112; DB 2; Length 32;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | | | |
Db 3 FNNFTVSFWLRVPKVSASHLE 23

RESULT 49

AA649075
ID AAB49075 standard; peptide; 33 AA.

AC AAB49075;

11-SEP-2003 (revised)
27-MAR-2001 (first entry)

Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:11.

Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic; antibody; vaccine; Alzheimer's disease; type 2 diabetes; reactive system amyloidosis; systemic senile amyloidosis; familial amyloid cardiomyopathy; transmissible spongiform encephalopathy; Creutzfeld-Jakob disease; Kuru; haemodialysis-associated beta-2-microglobulin deposition; amyloid beta peptide; universal T-cell epitope; neuroprotective.

Homo sapiens.

Clostridium tetani.

Chimeric.

WO200072876-A2.

07-DEC-2000.

01-JUN-2000; 2000WO-US015239.

01-JUN-1999; 99US-0137010P.

(NEUR-) NEURALAB LTD.

Schenk DB;

WPI, 2001-070921/08.

Pharmaceutical composition comprising immunogen against amyloid component such as fibril peptide or protein, or antibody against amyloid component

FT useful for treating amyloid diseases or amyloidoses.
 PS Disclosure; Page 45; 140pp; English.
 XX
 CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

SQ Sequence 33 AA;

Query Match 100.0%; Score 112; DB 4; Length 33;
 Best Local Similarity 100.0%; Pred. No. 1.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 8 FNNFTVSFWLRVPKVSASHLE 28

RESULT 50
 AAU11421
 ID AAU11421 standard; peptide; 34 AA.
 AC
 AC AAU11421;
 XX
 XX
 DT 12-MAR-2002 (first entry)
 XX
 XX Synthetic immunogen peptide 2.

XX Gonadotropin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.
 XX

OS Clostridium tetani.
 OS Mammalia.
 OS Synthetic.
 OS Chimeric.

XX Key Location/Qualifiers
 FH Peptide 1..21
 FT Peptide /note= "Tetanus toxoid sequence (947-967 aa)"
 FT Peptide 22..25
 FT Peptide /note= "Spacer peptide"
 FT Peptide 26..34
 FT Modified-site 34
 FT /note= "Gonadotropin releasing hormone epitope"

FT /note= "Amidated glycine or glycineamide"
 XX
 XX WO200185763-A2.
 FN
 XX 15-NOV-2001.
 PD
 XX 04-MAY-2001; 2001WO-US014363.
 PF
 XX 05-MAY-2000; 2000US-0202328P.
 PR
 XX (APHT-) APHTON CORP.
 PA
 XX Grimes S, Michaeli D, Stevens VC;
 PI
 XX WPI; 2002-0494440/06.
 DR

XX Novel synthetic immunogen for inducing immune response against
 XX gonadotropin releasing hormone, comprises fusion peptide having
 XX promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 XX or its analog.
 XX

XX Claim 11; Page 7; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 XX antibodies against gonadotropin releasing hormone (GnRH) also known as
 XX luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 XX which comprises a promiscuous helper T-cell peptide epitope and
 XX immunomimic peptide epitope or its analog. The synthetic immunogen is
 XX useful inducing an immune response against GnRH in an animal subject, and
 XX as such is useful as a contraceptive and in the treatment of diseases
 XX such as cancer (of the breast, uterus and other gynaecological cancer),
 XX endometriosis, uterine fibroids, benign prostatic hypertrophy and
 XX prostate cancer. The immunogen is effective in eliciting high and
 XX specific anti-GnRH antibody titres. The present sequence is a synthetic
 XX immunogen of the invention

SQ Sequence 34 AA;

Query Match 100.0%; Score 112; DB 5; Length 34;
 Best Local Similarity 100.0%; Pred. No. 1.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 51
 AAG63662
 ID AAG63662 standard; peptide; 36 AA.
 AC
 AC AAG63662;
 XX
 XX 29-OCT-2001 (first entry)
 DT

XX Peptide comprising 5 conjugation sites for a pseudopeptide.

XX Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
 KW macrophage; dendritic cell; vaccine; autoimmune disease.
 XX

OS Synthetic.

XX WO200146127-A1.

XX 28-JUN-2001.

XX 22-DEC-1999; 99WO-IB002038.

XX 22-DEC-1999; 99WO-IB002038.

XX (OMPH-) OM-PHARMA.

XX Bauer J, Martin OR, Rodriguez S;

XX DR WPI; 2001-502469/55.
 XX PS New amphiphilic acylated pseudopeptides having a functionalized auxiliary
 XX PT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.
 XX CC
 XX CC Example 3; Page 61; 166pp; French.
 XX CC The specification describes N-Acylated pseudopeptides, which have a
 CC neutral or charged acidic group at one terminal and a functionalized
 CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
 CC and adjuvant action, based on activation of antigen presenting cells
 CC (e.g. macrophages or dendritic cells), induction of differentiation of
 CC dendritic cells, induction of cytokine production and induction of
 CC maturation of immunocompetent cell strains originating from hematopoietic
 CC and lymphoid organs. They reinforce humoral and cellular immunity. They
 CC can be grafted onto antigens (to modulate immune response) or onto drugs
 CC (to improve the therapeutic activity or targeting). The pseudopeptides
 CC are thus useful in human or veterinary medicine as immunizing or
 CC diagnostic agents. Typically, they are used as adjuvants together with
 CC (or covalently bonded to) antigens for vaccination against viral,
 CC parasitic/protozoal, microbial or fungal infections; incubated with blood
 CC cells ex vivo, to render the cells immunocompetent before reintroduction
 CC in vivo; or used in therapy of certain autoimmune diseases. The
 CC pseudopeptides are useful as carriers for antigens or other therapeutic
 CC agents due to their ability to form non-covalent bonds via the
 CC hydrophobic or hydrophilic auxiliary spacer. The present sequence
 CC represents a peptide, which has 5 possible conjugation sites for the
 CC pseudopeptides of the invention
 XX CC Sequence 36 AA;
 SQ Query Match 100.0%; Score 112; DB 4; Length 36;
 Best Local Similarity 100.0%; Pred. No. 1.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPRKVSASHLE 21
 DB 16 FNNFTVSFWLRVPRKVSASHLE 36
 RESULT 52
 AAG63515
 ID AAG63515 standard; peptide; 36 AA.
 AC AAG63515;
 XX 15-OCT-2001 (first entry)
 XX A peptide which may be conjugated to pseudopeptides.
 DE Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
 KW macrophage; dendritic cell; cytokine production; immunocompetent cell;
 KW autoimmune disease.
 XX Synthetic.
 OS WO200146126-A1.
 PN 28-JUN-2001.
 XX 21-DEC-2000; 2000WO-FR003650.
 XX 22-DEC-1999; 99WO-IB002038.
 PR (OMPH-) OM-PHARMA.
 PA Bauer J, Martin OR, Rodriguez S;
 XX WPI; 2001-496651/54.
 XX New amphiphilic acylated pseudopeptides having a functionalized auxiliary
 PT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.
 PT CC

XX CC Example 3.3; Page 88; 267pp; French.
 XX PS The specification describes N-Acylated pseudopeptides, which have a
 CC neutral or charged acidic group at one terminal and a functionalized
 CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
 CC and adjuvant action, based on activation of antigen presenting cells
 CC (e.g. macrophages or dendritic cells), induction of differentiation of
 CC dendritic cells, induction of cytokine production and induction of
 CC maturation of immunocompetent cell strains originating from hematopoietic
 CC and lymphoid organs. They reinforce humoral and cellular immunity. They
 CC can be grafted onto antigens (to modulate immune response) or onto drugs
 CC (to improve the therapeutic activity or targeting). The pseudopeptides
 CC are thus useful in human or veterinary medicine as immunizing or
 CC diagnostic agents. Typically, the pseudopeptides are used as adjuvants
 CC together with (or covalently bonded to) antigens for vaccination against
 CC viral, parasitic/protozoal, microbial or fungal infections; incubated
 CC with blood cells ex vivo, to render the cells immunocompetent before
 CC reintroduction in vivo; or used in therapy of certain autoimmune
 CC diseases. The present sequence represents a peptide which may be
 CC conjugated to pseudopeptides of the invention
 XX CC Sequence 36 AA;
 SQ Query Match 100.0%; Score 112; DB 4; Length 36;
 Best Local Similarity 100.0%; Pred. No. 1.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPRKVSASHLE 21
 DB 16 FNNFTVSFWLRVPRKVSASHLE 36
 RESULT 53
 ADP02886
 ID ADP02886 standard; peptide; 36 AA.
 XX ADP02886;
 AC 12-AUG-2004 (first entry)
 XX Tetanus toxoid amino acids 830-844 and 947-967 for fusion protein.
 DE antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX Clostridium tetani.
 OS WO2004041067-A2.
 PN 21-MAY-2004.
 XX 31-OCT-2003; 2003WO-US034527.
 XX 01-NOV-2002; 2002US-0423012P.
 XX (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX Disclosure; SEQ ID NO 19; 78pp; English.
 XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in

CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 4; Length 43;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPRKVSASHLE 21

DB 23 FNNFTVSWLRVPRKVSASHLE 43

RESULT 56

AAB46177

ID AAB46177 standard; peptide; 43 AA.

XX AC AAB46177;

XX DT 04-APR-2001 (first entry)

XX DE Tetanus toxoid 830-844 + 947-967 epitope AN90542.

XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;

XX KW PC receptor mediated phagocytosis; immunogenic response; neuroprotective;

XX KW amyloid precursor protein; Alzheimer's disease.

XX OS Clostridium tetani.

XX XX WO200072880-A2.

XX PD 07-DEC-2000.

XX PF 26-MAY-2000; 2000WO-US014810.

XX PR 28-MAY-1999; 99US-00322289.

XX PA (NEUR-) NEURALAB LTD.

XX PI Schenk DB, Bard P, Vasquez NJ, Yednock T;

XX DR WPI; 2001-032104/04.

XX PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX PS Disclosure; Page 31; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (PC
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 4; Length 43;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPRKVSASHLE 21

DB 23 FNNFTVSWLRVPRKVSASHLE 43

RESULT 57

ADP02902

ID ADP02902 standard; peptide; 43 AA.

XX AC ADP02902;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #14 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

XX KW aggregation; brain; immunogenic response; beta-amyloid;

XX KW Parkinson's disease.

XX OS Synthetic.

XX PN WO2004041067-A2.

XX XX 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.

XX PS Disclosure; SEQ ID NO 35; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta

CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 8; Length 43;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 23 FNNFTVSFWLRVPKVSASHLE 43

RESULT 58

AAB49090
 ID AAB49090 standard; protein; 44 AA.

XX AC AAB49090;

XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:26.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeldt-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by

CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeldt-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 24 FNNFTVSFWLRVPKVSASHLE 44

RESULT 59

AAB46194

ID AAB46194 standard; peptide; 44 AA.

XX AC AAB46194;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid epitope fusion construct #14.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The

CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 4; Length 44;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPKVSASHLE 21
 24 FNNFTVSWLRVPKVSASHLE 44

RESULT 60

ADP02917
 ID ADP02917 standard; peptide; 44 AA.

XX AC ADP02917;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #29 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Synthetic.

XX PN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.
 (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

PT Preventing or treating disease such as Parkinson's disease characterized
 by Lewy bodies or alpha-synuclein aggregation in brain by administering
 agent that induces immunogenic response against alpha-synuclein and/or
 beta-amyloid.

PS Disclosure; SEQ ID NO 50; 78pp; English.

CC The invention relates to a method of preventing (M1) or treating a
 disease characterized by Lewy bodies or alpha-synuclein aggregation in
 the brain, by administering an agent that induces an immunogenic response
 against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 useful for preventing or treating a disease such as Parkinson's disease
 characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 which involves administering agent that induces immunogenic response
 against alpha-synuclein and/or Abeta to a patient, and the administration
 improves motor characteristics of the patient. Alpha-synuclein or Abeta
 is useful in the manufacture of a preparation for simultaneous, separate
 or sequential treatment of disease characterized by Lewy bodies or alpha-
 synuclein aggregation. This sequence corresponds to a fusion peptide used
 in the method of the invention.

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 8; Length 44;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPKVSASHLE 21

Db 24 FNNFTVSWLRVPKVSASHLE 44

RESULT 61

AAU11429
 ID AAU11429 standard; peptide; 50 AA.

XX AC AAU11429;

XX DT 12-MAR-2002 (first entry)

XX DE Synthetic immunogen peptide 10.

XX KW Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX OS Clostridium tetani.

XX OS Mammalia.

XX OS Synthetic.

XX OS Chimeric.

XX FH Key Location/Qualifiers

FT Peptide 1. 10
 /note= "Gonadotrophin releasing hormone epitope (1. 10
 aa)"

FT FT Misc-difference 1

FT FT /label= OTHER
 /note= "Pyro-glutamic acid or 5-oxo proline"
 FT Peptide 11. 16
 /note= "Spacer peptide"

FT Peptide 17. 37
 /note= "Tetanus toxoid (947-967 aa)"

FT Peptide 38. 41
 /note= "Spacer peptide"

FT Peptide 42. 50
 /note= "Gonadotrophin releasing hormone epitope (2-10
 aa)"

FT Modified-site 50

FT /note= "Amidated glycine or glycylamide"

XX WO200195763-A2.

XX PD 15-NOV-2001.

XX PF 04-MAY-2001; 2001WO-US014363.

XX PR 05-MAY-2000; 2000US-0202328P.

XX PA (APHT-) APHTON CORP.

XX PI Grimes S, Michaeli D, Stevens VC;

XX DR WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
 gonadotrophin releasing hormone, comprises fusion peptide having
 promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 or its analog.

PS Claim 11; Page 11; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 antibodies against gonadotrophin releasing hormone (GnRH) also known as
 luteinising hormone releasing hormone (LHRH) comprising a fusion peptide
 which comprises a promiscuous helper T-cell peptide epitope and
 immunomimic peptide epitope or its analogue. The synthetic immunogen is
 useful inducing an immune response against GnRH in an animal subject, and
 as such is useful as a contraceptive and in the treatment of diseases
 such as cancer (of the breast, uterus and other gynaecological cancer),

CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is a synthetic
 CC immunogen of the invention
 XX
 SQ Sequence 50 AA;

Query Match 100.0%; Score 112; DB 5; Length 50;
 Best Local Similarity 100.0%; Pred. No. 2.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 17 FNNFTVSFWLRVPKVSASHLE 37

RESULT 62
 AAB49091
 ID AAB49091 standard; protein; 51 AA.
 XX
 AC AAB49091;
 XX
 DT 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 XX
 DE Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:27.
 XX
 KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX

OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 XX
 PN WO200072876-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 01-JUN-2000; 2000WO-US015239.
 XX
 PR 01-JUN-1999; 99US-0137010P.
 XX
 PA (NEUR-) NEURALAB LTD.
 PI Schenk DB;
 XX
 DR WPI; 2001-070921/08.
 XX
 PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidosis.
 XX
 PS Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by

CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)
 XX
 SQ Sequence 51 AA;

Query Match 100.0%; Score 112; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 2.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 24 FNNFTVSFWLRVPKVSASHLE 44

RESULT 63
 AAB46195
 ID AAB46195 standard; peptide; 51 AA.
 XX
 AC AAB46195;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid epitope fusion construct #15.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072880-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX
 DR WPI; 2001-032104/04.
 XX

PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 32; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The

CC methods are useful for prophylactic and therapeutic treatment of
CC Alzheimer's disease
XX
SQ Sequence 51 AA;

Query Match 100.0%; Score 112; DB 4; Length 51;
Best Local Similarity 100.0%; Pred. No. 2.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFVLKPKVSASHLE 21
|||||
DB 24 FNNFTVSFVLKPKVSASHLE 44

RESULT 64

ADP02918
ID ADP02918 standard; peptide; 51 AA.

XX ADP02918;

XX 12-AUG-2004 (first entry)

XX Fusion protein #30 for treating neurodegenerative disorder.

XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.

XX Synthetic.

XX WO2004041067-A2.

XX PD 21-MAY-2004.

XX 31-OCT-2003; 2003WO-US034527.

XX 01-NOV-2002; 2002US-0423012P.

XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.

XX Schenk DB, Masliah E;

XX WPI; 2004-411388/38.

XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.

XX Disclosure; SEQ ID NO 51; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.

XX Sequence 51 AA;

Query Match 100.0%; Score 112; DB 8; Length 51;
Best Local Similarity 100.0%; Pred. No. 2.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFVLKPKVSASHLE 21
|||||

DB 24 FNNFTVSFVLKPKVSASHLE 44
|||||

RESULT 65

AAG63661

ID AAG63661 standard; peptide; 59 AA.

XX AAG63661;

XX 29-OCT-2001 (first entry)

XX Peptide comprising 4 conjugation sites for a pseudopeptide.

XX Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
KW macrophage; dendritic cell; vaccine; autoimmune disease.

XX Synthetic.

XX WO200146127-A1.

XX PD 28-JUN-2001.

XX 22-DEC-1999; 99WO-IB002038.

XX 22-DEC-1999; 99WO-IB002038.

XX (OMPH-) OM-PHARMA.

XX Bauer J, Martin OR, Rodriguez S;

XX WPI; 2001-502469/55.

XX New amphiphilic acylated pseudopeptides having a functionalized auxiliary
PT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.

XX Example 3; Page 59; 166pp; French.

XX The specification describes N-Acylated pseudopeptides, which have a
CC neutral or charged acidic group at one terminal and a functionalized
CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
CC and adjuvant action, based on activation of antigen presenting cells
CC (e.g. macrophages or dendritic cells), induction of differentiation of
CC dendritic cells, induction of cytokine production and induction of
CC maturation of immunocompetent cell strains originating from hematopoietic
CC and lymphoid organs. They reinforce humoral and cellular immunity. They
CC can be grafted onto antigens (to modulate immune response) or onto drugs
CC (to improve the therapeutic activity or targeting). The pseudopeptides
CC are thus useful in human or veterinary medicine as immunizing or
CC diagnostic agents. Typically, they are used as adjuvants together with
CC (or covalently bonded to) antigens for vaccination against viral,
CC parasitic/protozoal, microbial or fungal infections; incubated with blood
CC cells ex vivo, to render the cells immunocompetent before reintroduction
CC in vivo; or used in therapy of certain autoimmune diseases. The
CC pseudopeptides are useful as carriers for antigens or other therapeutic
CC agents due to their ability to form non-covalent bonds via the
CC hydrophobic or hydrophilic auxiliary spacer. The present sequence
CC represents a peptide, which has 4 possible conjugation sites for the
CC pseudopeptides of the invention

XX Sequence 59 AA;

Query Match 100.0%; Score 112; DB 4; Length 59;
Best Local Similarity 100.0%; Pred. No. 2.5e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFVLKPKVSASHLE 21
|||||

DB 39 FNNFTVSFVLKPKVSASHLE 59
|||||

RESULT 66

AAG63513

ID XX AAG63513 standard; peptide; 59 AA.
 AC XX AAG63513;
 DT XX 15-OCT-2001 (first entry)
 DE XX A peptide which may be conjugated to pseudopeptides.
 KW XX Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
 KW XX macrophage; dendritic cell; cytokine production; immunocompetent cell;
 KW XX autoimmune disease.
 XX OS Synthetic.
 XX OS WO200146126-A1.
 PN XX 28-JUN-2001.
 PD XX 21-DEC-2000; 2000WO-FR003650.
 PF XX 22-DEC-1999; 99WO-IB002038.
 PR XX (OMPH-) OM-PHARMA.
 PA XX Bauer J, Martin OR, Rodriguez S;
 PI XX WPI; 2001-496651/54.
 DR XX
 XX New amphiphilic acylated pseudopeptides having a functionalized auxiliary
 FT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.
 PT
 XX
 PS Example 3.2; Page 87; 267pp; French.

CC The specification describes N-Acylated pseudopeptides, which have a
 CC neutral or charged acidic group at one terminal and a functionalized
 CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
 CC and adjuvant action, based on activation of antigen presenting cells
 CC (e.g. macrophages or dendritic cells), induction of differentiation of
 CC dendritic cells, induction of cytokine production and induction of
 CC maturation of immunocompetent cell strains originating from hematopoietic
 CC and lymphoid organs. They reinforce humoral and cellular immunity. They
 CC can be grafted onto antigens (to modulate immune response) or onto drugs
 CC (to improve the therapeutic activity or targeting). The pseudopeptides
 CC are thus useful in human or veterinary medicine as immunizing or
 CC diagnostic agents. Typically, the pseudopeptides are used as adjuvants
 CC together with (or covalently bonded to) antigens for vaccination against
 CC viral, parasitic/protozoal, microbial or fungal infections; incubated
 CC with blood cells *ex vivo*, to render the cells immunocompetent before
 CC reintroduction in vivo; or used in therapy of certain autoimmune
 CC diseases. The present sequence represents a peptide which may be
 CC conjugated to pseudopeptides of the invention

XX Sequence 59 AA;

Query Match 100.0%; Score 112; DB 4; Length 59;
 Best Local Similarity 100.0%; Pred. No. 2.5e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 39 FNNFTVSFWLRVPKVSASHLE 59

RESULT 67

AAR14263
 ID AAR14263 standard; peptide; 63 AA.
 AC AAR14263;
 XX
 XX 14-JAN-1992 (first entry)
 DT
 XX Immunogenic branched polypeptides for antimalarial vaccines.
 DE
 XX

KW Immunogen; Plasmodium; malaria; lysine; immunoassay.
 XX Synthetic.
 OS
 XX Location/Qualifiers
 FH 25..38
 FT /label= T epitope
 FT 39..59
 FT /label= T epitope
 FT 60
 FT Modified-site
 FT /note= "epsilon amino substituted with the sequence
 FT (NANP)6QYIKANSKFIGITEFNNFTVSFWLRVPKVSASHLE"
 FT 61
 FT Modified-site
 FT /note= "epsilon amino substituted by Lys in which both
 FT alpha and epsilon amino groups are substituted with the
 FT sequence (NANP)6QYIKANSKFIGITEFNNFTVSFWLRVPKVSASHLE"
 FT 62
 FT Modified-site
 FT /note= "epsilon amino substituted by Lys in which each of
 FT the alpha and epsilon amino groups is substituted by Lys,
 FT both of the latter two Lys residues being substituted in
 FT each of their alpha and epsilon amino groups by
 FT (NANP)6QYIKANSKFIGITEFNNFTVSFWLRVPKVSASHLE"
 XX
 XX EP450715-A.
 PN
 XX 09-OCT-1991.
 PD
 XX 28-MAR-1991; 91EP-00200727.
 PF
 XX 02-APR-1990; 90IT-00019914.
 PR
 XX (ENIE) ENIRICERCH SPA.
 PA
 XX Pessi A, Bianchi E, Corradin G;
 PI WPI; 1991-297504/41.
 DR
 XX New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 PT immunoassays and as anti sporozoite vaccines against Plasmodium
 PT falciparum.
 PT
 XX Claim 10; Page 15; 22pp; English.
 XX The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmodial B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVPKVSASHLE or QYIKANSKFIGITE. The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC antimalaria vaccines and for determining anti-Plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14261-2, AAR14264-5 and AAR15436
 XX
 XX Sequence 63 AA;
 SQ
 Query Match 100.0%; Score 112; DB 2; Length 63;
 Best Local Similarity 100.0%; Pred. No. 2.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 39 FNNFTVSFWLRVPKVSASHLE 59
 RESULT 68
 AAR14261
 ID AAR14261 standard; peptide; 64 AA.
 AC AAR14261;
 XX
 XX

DT 14-JAN-1992 (first entry)
 XX Immunogenic branched polypeptides for antimalarial vaccines.
 DE Immunogen; Plasmodium; malaria; lysine; immunoassay.
 KW Synthetic.
 XX
 OS Key
 XX Region
 FT Location/Qualifiers
 FT 1..21
 FT /label= T epitope
 FT Modified-site
 FT 62
 FT /note= "epsilon-amino substituted with the sequence
 FT FNNFTVSFWLRVPKVSASHLE (NANP) 10"
 FT Modified-site
 FT 63
 FT /note= "epsilon-amino group substituted with Lys in which
 FT both alpha and epsilon amino groups are substituted with
 FT the sequence FNNFTVSFWLRVPKVSASHLE (NANP) 10"
 XX
 PN EP450715-A.
 XX
 XX 09-OCT-1991.
 XX
 XX 28-MAR-1991; 91EP-00200727.
 PF
 XX 02-APR-1990; 90IT-00019914.
 PR
 XX (ENTE) ENIRICERCH SPA.
 PA
 XX Pessi A, Bianchi E, Corradin G;
 PI
 XX WPI; 1991-297504/41.
 DR
 XX New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 XX immunoassays and as anti sporozoite vaccines against Plasmodium
 PT falciparum.
 PT
 XX
 PS Claim 8; Page 15; 22pp; English.
 XX
 CC The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmoidal B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVPKVSASHLEA or QYIKANSKFIGITE. The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC antimalaria vaccines and for determining anti-Plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14262 - AAR14265 and AAR15436
 XX
 SQ Sequence 64 AA;
 Query Match 100.0%; Score 112; DB 2; Length 64;
 Best Local Similarity 100.0%; Pred. No. 2.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 69
 ADM06902
 ID ADM06902 standard; peptide; 64 AA.
 XX
 AC ADM06902;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Mature rat ghrelin with added epitopes (peptide 3), SEQ ID NO:15.
 XX

KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnerary; vaccine; rat; epitope.
 XX
 OS Rattus sp.
 XX Synthetic.
 XX
 PN WO2004024183-A1.
 XX
 XX 25-MAR-2004.
 PD
 XX 12-SEP-2003; 2003WO-DK000592.
 PF
 XX 12-SEP-2002; 2002DK-00001345.
 PR
 XX 12-SEP-2002; 2002US-0410164P.
 PR
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Boving TEG, Klyaner S;
 XX
 XX WPI; 2004-329403/30.
 DR
 XX Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 PT
 XX
 PS Example 1; SEQ ID NO 15; 83pp; English.
 XX
 CC The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting a
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents a ghrelin analogue
 CC comprising mature rat ghrelin with added epitopes used in an example of
 CC the invention.
 XX
 SQ Sequence 64 AA;
 Query Match 100.0%; Score 112; DB 8; Length 64;
 Best Local Similarity 100.0%; Pred. No. 2.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 44 FNNFTVSFWLRVPKVSASHLE 64
 RESULT 70
 AAR14265
 ID AAR14265 standard; peptide; 65 AA.
 XX
 AC AAR14265;
 XX
 DT 14-JAN-1992 (first entry)
 XX

Immunogenic branched polypeptides for antimalarial vaccines.

Immunogen; Plasmodium; malaria; lysine; immunoassay.

Synthetic.

Key Location/Qualifiers
Region 1..21
/label= T epitope
Modified-site 63
/note= "epsilon amino substituted with the sequence
FNNFTVSFWLRVPKVSASHLE (NANP)10K "
Modified-site 64
/note= "epsilon amino substituted with lys in which alpha
and epsilon amino groups are each substituted with the
sequence FNNFTVSFWLRVPKVSASHLE (NANP)10K"

EP450715-A.

09-OCT-1991.

28-MAR-1991; 91EP-00200727.

02-APR-1990; 90IT-00019914.

(ENIE) ENIRICERCH SPA.

Pessi A, Bianchi E, Corradin G;

WPI; 1991-297504/41.

New immunogenic branched polypeptide derivs. - used as antigens in enzyme
immunoassays and as anti sporozoite vaccines against Plasmodium
falciparum.

Claim 13; Page 16; 22pp; English.

The peptide is a specific example of highly generic immunogenic
substituted lysines or polylysines having a number n (where n is 1-15) of
L-lysine amino acid residues of alpha and epsilon amide linkage, where
(n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
groups are substituted with polypeptides consisting of one or more
plasmoidal B epitopes covalently bound to one or more peptides with an
amino acid sequence corresponding to that of a T epitope such as
FNNFTVSFWLRVPKVSASHLEA or QYKANSKFIGITE. The branched polypeptides can
be used as immunogens for preparing genetically non-restricted
antimalaria vaccines and for determining anti-Plasmodium antibodies in
blood, serum and blood-spot samples. Determination can be effected by
ELISA. See also AAR14261 - AAR14264, AAR14266 and AAR15436

Sequence 65 AA;

Query Match 100.0%; Score 112; DB 2; Length 65;
Best Local Similarity 100.0%; Pred. No. 2.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 71

AAR14262

ID AAR14262 standard; peptide; 65 AA.

AC AAR14262;

DT 14-JAN-1992 (first entry)

Immunogenic branched polypeptides for antimalarial vaccines.

Immunogen; Plasmodium; malaria; lysine; immunoassay.

Synthetic.

Key Location/Qualifiers
Region 1..21
/label= T epitope
Modified-site 62
/note= "epsilon amino substituted by the sequence
VQGEESNDK"
Modified-site 63
/note= "epsilon amino substituted by Lys in which the
alpha amino is substituted with the sequence
FNNFTVSFWLRVPKVSASHLE (NANP)10 and the epsilon amino is
substituted with the sequence VQGEESNDK"
Modified-site 64
/note= "epsilon amino substituted by Lys in which both
the alpha and epsilon amino groups are substituted with
further Lys residues, the latter two Lys residues each
being substituted on the alpha amino by
FNNFTVSFWLRVPKVSASHLE (NANP)10 and on the epsilon amino
by the sequence VQGEESNDK"

EP450715-A.

09-OCT-1991.

28-MAR-1991; 91EP-00200727.

02-APR-1990; 90IT-00019914.

(ENIE) ENIRICERCH SPA.

Pessi A, Bianchi E, Corradin G;

WPI; 1991-297504/41.

New immunogenic branched polypeptide derivs. - used as antigens in enzyme
immunoassays and as anti sporozoite vaccines against Plasmodium
falciparum.

Claim 9; Page 15; 22pp; English.

The peptide is a specific example of highly generic immunogenic
substituted lysines or polylysines having a number n (where n is 1-15) of
L-lysine amino acid residues of alpha and epsilon amide linkage, where
(n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
groups are substituted with polypeptides consisting of one or more
plasmoidal B epitopes covalently bound to one or more peptides with an
amino acid sequence corresponding to that of a T epitope such as
FNNFTVSFWLRVPKVSASHLEA or QYKANSKFIGITE. The branched polypeptides can
be used as immunogens for preparing genetically non-restricted
antimalaria vaccines and for determining anti-Plasmodium antibodies in
blood, serum and blood-spot samples. Determination can be effected by
ELISA. See also AAR14262 - AAR14265 and AAR15436

Sequence 65 AA;

Query Match 100.0%; Score 112; DB 2; Length 65;
Best Local Similarity 100.0%; Pred. No. 2.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 72

ADM06904

ID ADM06904 standard; peptide; 68 AA.

AC ADM06904;

DT 17-JUN-2004 (first entry)

AC AAB46190;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid epitope fusion construct #10.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072880-A2.
 PD
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX
 DR WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 32; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 72 AA;
 Query Match 100.0%; Score 112; DB 4; Length 72;
 Best Local Similarity 100.0%; Pred. No. 3.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPKVSASHLE 21
 Db |||||
 52 FNNFTVSWLRVPKVSASHLE 72
 RESULT 75
 ADP02897
 ID ADP02897 standard; peptide; 74 AA.
 XX
 AC ADP02897;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #9 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW parkinson's disease.
 XX
 OS Synthetic.
 XX

PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 30; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 74 AA;
 Query Match 100.0%; Score 112; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. No. 3.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPKVSASHLE 21
 Db |||||
 17 FNNFTVSWLRVPKVSASHLE 37
 RESULT 76
 AAR14264
 ID AAR14264 standard; peptide; 77 AA.
 XX
 AC AAR14264;
 XX
 DT 14-JAN-1992 (first entry)
 XX
 DE Immunogenic branched polypeptides for antimalarial vaccines.
 XX
 KW Immunogen; Plasmodium; malaria; lysine; immunoassay.
 XX
 OS Synthetic.
 XX
 PH Key Location/Qualifiers
 FT Region 13..33
 FT /label= T epitope
 FT Modified-site 75
 FT /note= "epsilon amino substituted with the sequence
 FT (NANP)3FNNFTVSWLRVPKVSASHLE (NANP)10K"
 FT Modified-site 76
 FT /note= "epsilon amino substituted with Lys in which alpha
 FT and epsilon amino groups are each substituted with the
 FT sequence (NANP)3FNNFTVSWLRVPKVSASHLE (NANP)10K"
 XX
 PN EP450715-A.

XX PD 09-OCT-1991.
 XX PF 28-MAR-1991; 91EP-00200727.
 XX PR 02-APR-1990; 90IT-00019914.
 XX PA (ENIE) ENIRICERCH SPA.
 XX PI Pessi A, Bianchi E, Corradin G;
 XX WPI; 1991-297504/41.
 XX DR
 XX PT New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 XX PT immunoassays and as anti sporozoite vaccines against Plasmodium
 XX PT falciparum.
 XX PS Claim 11; Page 16; 22pp; English.
 XX CC The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n-1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmodial B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVVKVSASHLEA or QVIRANSKFIGITE . The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC animalaria vaccines and for determining anti-plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14261 - AAR14263, AAR14265 and AAR15436
 XX SQ Sequence 77 AA;

Query Match 100.0%; Score 112; DB 2; Length 77;
 Best Local Similarity 100.0%; Pred. No. 3.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 13 FNNFTVSFWLRVVKVSASHLE 33

RESULT 77
 ADP02915
 ID ADP02915 standard; peptide; 79 AA.
 XX AC ADP02915;
 XX DT 12-AUG-2004 (first entry)
 XX DE Fusion protein #27 for treating neurodegenerative disorder.
 XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX OS Synthetic.
 XX FN WO2004041067-A2.
 XX PD 21-MAY-2004.
 XX PF 31-OCT-2003; 2003WO-US034527.
 XX PR 01-NOV-2002; 2002US-0423012P.
 XX PA (ELAN-) ELAN PHARM INC.
 XX PA (REGC) UNIV CALIFORNIA.
 XX PI Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX PS Disclosure; SEQ ID NO 48; 78pp; English.
 XX CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 79 AA;

Query Match 100.0%; Score 112; DB 8; Length 79;
 Best Local Similarity 100.0%; Pred. No. 3.5e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 52 FNNFTVSFWLRVVKVSASHLE 72

RESULT 78
 ADP02896
 ID ADP02896 standard; peptide; 101 AA.
 XX AC ADP02896;

DT 12-AUG-2004 (first entry)

XX DE Fusion protein #8 for treating neurodegenerative disorder.
 XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.

XX OS Synthetic.

XX FN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.
 XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.

XX PS Disclosure; SEQ ID NO 29; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in

CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX Sequence 101 AA;

Query Match 100.0%; Score 112; DB 8; Length 101;
 Best Local Similarity 100.0%; Pred. No. 4.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 45 FNNFTVSFWLRVPKVSASHLE 65

RESULT 79
 AAB20149
 ID AAB20149 standard; protein; 109 AA.

XX AAB20149;

XX 30-APR-2001 (first entry)

XX Growth differentiation factor 8 AutoVac construct GDF-8 P30-2.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.

XX Key Location/Qualifiers

FT Region 1..48
 FT /note= "identical to residues 267-314 of human GDF-8"
 FT Region 49..69
 FT /note= "tetanus toxoid P2 epitope"

FT Region 70..109
 FT /note= "identical to residues 336-375 of human GDF-8"

FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"

FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
 XX regulating growth differentiation factor 8 (GDF-8) activity in the animal
 XX through induction of anti-GDF-8 antibody production.

XX

XX Example 1; Page 101-102; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 P30-2, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 49-69 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P30 (see AAB20144). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P30, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure

XX Sequence 109 AA;

Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 49 FNNFTVSFWLRVPKVSASHLE 69

RESULT 80

AAB20151

ID AAB20151 standard; protein; 109 AA.

XX AAB20151;

XX 30-APR-2001 (first entry)

XX Growth differentiation factor 8 AutoVac construct GDF-8 P30-3B.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

XX Homo sapiens.

OS Clostridium tetani.

OS Synthetic.

OS Chimeric.

XX Key Location/Qualifiers

FT Region 1..83

FT /note= "identical to residues 267-349 of human GDF-8"

FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"

FT Region 84..104

FT /note= "tetanus toxoid P2 epitope"

FT Misc-difference 90..91

FT /note= "optionally replaced by Glu-Gly"

FT Region 105..109

FT /note= "identical to residues 371-375 of human GDF-8"

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX PA (MEBI-) M & E BIOTECH AS.
 XX PI Halkier T, Mouritsen S, Klysenner S;
 XX XX WPI; 2001-112680/12.
 XX DR
 XX FT Increasing the muscle mass of animals used in meat production by down
 XX PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 XX PT through induction of anti-GDF-8 antibody production.
 XX XX
 XX PS Example 1; Page 104; 110pp; English.
 XX XX
 CC The present sequence is that of AutoVac construct GDF-8 P30-3B,
 CC comprising the 109 C-terminal amino acid residues of human growth
 CC differentiation factor 8 (GDF-8) in which residues 84-104 are replaced by
 CC the promiscuous tetanus toxin T-cell epitope P30 (see AAB20144). It is an
 CC object of the invention to produce a recombinant therapeutic vaccine that
 CC is capable of effecting down-regulation of GDF-8 in order to increase the
 CC muscle growth rate of farm animals. The vaccines (see AAB20145-53) are
 CC capable of breaking autotolerance against autologous GDF-8. They comprise
 CC the C-terminal portion of human GDF-8 in which a portion of the native
 CC sequence is replaced by a T-cell epitope such as P30, with minimal
 CC disturbance of the authentic 3-dimensional structure of the protein.
 CC Nucleic acids encoding the GDF-8 variants can be used for genetic
 CC immunisation of the animals. Down-regulation of GDF-8 activity can
 CC increase muscle mass by up to at least 45% in cattle, pigs and poultry
 CC used for meat production, reducing the need for antibiotic feed-
 CC additives. Anti-GDF8 vaccines can be used to treat human diseases such as
 CC cancer cachexia where muscle atrophy is pronounced and for patients
 CC suffering from acute and chronic heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 84 FNNFTVSFWLRVPKVSASHLE 104
 |||||
 RESULT 81
 AAB20150
 ID AAB20150 standard; protein; 109 AA.
 XX
 AC AAB20150;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P30-3A.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FT Region 1..78
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Region 79..99
 FT /note= "tetanus toxoid P2 epitope"
 FT Misc-difference 90..91
 FT /note= "Optionally replaced by Glu-Gly"
 FT Region 100..109

FT XX /note= "identical to residues 366-375 of human GDF-8"
 XX PN W0200105820-A2.
 XX XX 25-JAN-2001.
 XX PD 20-JUL-2000; 2000WO-DK000413.
 XX PF 20-JUL-1999; 99DK-00001014.
 XX PR 26-JUL-1999; 99US-0145275P.
 XX XX
 XX PA (MEBI-) M & E BIOTECH AS.
 XX XX
 XX PI Halkier T, Mouritsen S, Klysenner S;
 XX XX WPI; 2001-112680/12.
 XX DR
 XX FT Increasing the muscle mass of animals used in meat production by down
 XX PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 XX PT through induction of anti-GDF-8 antibody production.
 XX XX
 XX PS Example 1; Page 102-103; 110pp; English.
 XX XX
 CC The present sequence is that of AutoVac construct GDF-8 P30-3A,
 CC comprising the 109 C-terminal amino acid residues of human growth
 CC differentiation factor 8 (GDF-8) in which residues 79-99 are replaced by
 CC the promiscuous tetanus toxin T-cell epitope P30 (see AAB20144). It is an
 CC object of the invention to produce a recombinant therapeutic vaccine that
 CC is capable of effecting down-regulation of GDF-8 in order to increase the
 CC muscle growth rate of farm animals. The vaccines (see AAB20145-53) are
 CC capable of breaking autotolerance against autologous GDF-8. They comprise
 CC the C-terminal portion of human GDF-8 in which a portion of the native
 CC sequence is replaced by a T-cell epitope such as P30, with minimal
 CC disturbance of the authentic 3-dimensional structure of the protein.
 CC Nucleic acids encoding the GDF-8 variants can be used for genetic
 CC immunisation of the animals. Down-regulation of GDF-8 activity can
 CC increase muscle mass by up to at least 45% in cattle, pigs and poultry
 CC used for meat production, reducing the need for antibiotic feed-
 CC additives. Anti-GDF8 vaccines can be used to treat human diseases such as
 CC cancer cachexia where muscle atrophy is pronounced and for patients
 CC suffering from acute and chronic heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 79 FNNFTVSFWLRVPKVSASHLE 99
 |||||
 RESULT 82
 AAB20148
 ID AAB20148 standard; protein; 109 AA.
 XX
 AC AAB20148;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P30-1.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers

FT Region 1..20
 FT /note= "identical to residues 267-286 of human GDF-8"
 FT 21..41
 FT /note= "tetanus toxoid P2 epitope"
 FT 42..109
 FT /note= "identical to residues 307-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 XX
 XX
 PN WO200105820-A2.
 XX
 XX 25-JAN-2001.
 XX
 XX 20-JUL-2000; 2000WO-DK000413.
 XX
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Halkier T, Mouritsen S, Klysner S;
 XX
 XX WPI; 2001-112680/12.
 DR
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 FT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 FT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 99; 110pp; English.
 XX
 CC The present sequence is that of AutoVac construct GDF-8 P30-1, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 21-41 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P30 (see AAB20144). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P30, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 XX Sequence 109 AA;
 SQ
 Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 ADL63984
 ID ADL63984 standard; protein; 121 AA.
 XX
 AC ADL63984;
 XX
 XX 03-JUN-2004 (first entry)
 DT
 XX Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 11.
 DE
 XX

KW human; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FH Peptide 74..94
 FT /note= "Tetanus P30 peptide"
 FT
 XX WO2004019974-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003703.
 XX
 XX 30-AUG-2002; 2002GB-00020212.
 PR 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 XX
 XX Ashman C, Ellis JH;
 PI
 XX WPI; 2004-239121/22.
 DR
 XX
 XX New immunogenic composition comprising an interleukin-13 (IL-13) element
 FT that drives an immune response recognizing human IL-13 and foreign T-cell
 FT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 PT
 XX Disclosure; SEQ ID NO 11; 89pp; English.
 PS
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing a tetanus p30
 CC peptide (immunogen 2) of the invention.
 XX
 XX Sequence 121 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 121;
 Best Local Similarity 100.0%; Pred. No. 5.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 74 FNNFTVSFWLRVPKVSASHLE 94
 ADL63908
 ID ADL63908 standard; protein; 121 AA.
 XX
 XX ADL63908;
 AC
 XX

```

DT 03-JUN-2004 (first entry)
DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 11.
KW human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 74..94
FT /note= "Tetanus P30 peptide"
XX
FN WO2004019975-A2.
XX
PD 11-MAR-2004.
XX
PF 28-AUG-2003; 2003WO-GB003729.
XX
PR 30-AUG-2002; 2002GB-00020211.
PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAX ) GLAXO GROUP LTD.
XX
PI Ellis JH, Ashman C;
XX
DR WPI; 2004-239122/22.
XX
PT New vaccine composition useful for treating asthma, Chronic obstructive
PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
PT immunogen generating an immune response against interleukin-13.
XX
PS Disclosure; SEQ ID NO 11; 89pp; English.
XX
CC This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric human IL-13 protein containing a tetanus p30
CC peptide (immunogen 2) of the invention.
XX
SQ Sequence 121 AA;
Query Match 100.0%; Score 112; DB 8; Length 121;
Best Local Similarity 100.0%; Pred. No. 5.7e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 74 FNNFTVSFWLRVPKVSASHLE 94

RESULT 85
ADL97891
ID ADL97891 standard; protein; 121 AA.

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XX AC ADL97891;
XX 03-JUN-2004 (first entry)
XX Human IL-13/tetanus toxin p30 epitope immunogen 2, SEQ ID NO:11.
XX Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
XX asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
XX hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
XX respiratory; anti-allergic; dermatological; human; T-helper epitope;
XX tetanus toxin; P30; mutant; mutein.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Region 74..94
FT /note= "Tetanus toxin p30 epitope"
XX
PN WO2004019979-A2.
XX
PD 11-MAR-2004.
XX
PF 28-AUG-2003; 2003WO-GB003721.
XX
PR 30-AUG-2002; 2002GB-00020211.
PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAX ) GLAXO GROUP LTD.
XX
PI Ellis JH, Ashman C;
XX
DR WPI; 2004-239126/22.
XX
PT Vaccine composition useful for treating asthma, Chronic Obstructive
PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
PT immunogen generating an immune response against interleukin-13.
XX
PS Disclosure; SEQ ID NO 11; 45pp; English.
XX
CC The invention relates to a vaccine composition for treating asthma or
CC COPD (chronic obstructive pulmonary disease). The vaccine composition
CC comprises an immunogen that is capable of generating an immune response
CC against self interleukin-13 (IL-13) and an adjuvant composition
CC comprising a combination of an immunostimulatory oligonucleotide
CC containing at least one unmethylated CG motif and a saponin. The IL-13
CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
CC epitopes. The vaccine composition is useful for treating asthma or COPD,
CC or atopic disorders such as hayfever, contact allergies or dermatitis.
CC The present sequence represents a human IL-13/tetanus toxin p30 epitope
CC immunogen of the invention.
XX
SQ Sequence 121 AA;
Query Match 100.0%; Score 112; DB 8; Length 121;
Best Local Similarity 100.0%; Pred. No. 5.7e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 74 FNNFTVSFWLRVPKVSASHLE 94

RESULT 86
AAB45524
ID AAB45524 standard; protein; 122 AA.
XX
AC AAB45524;
XX
DT 26-FEB-2001 (first entry)

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XX DE Modified murine interleukin-5 SEQ ID NO: 48.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX Mus musculus.
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
XX
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
PI
XX
XX WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 7; Page 156; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 122 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 122;
Best Local Similarity 100.0%; Pred. No. 5.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX
XX 1 FNNFTVSFWLRVPKVSASHLE 21
DB 30 FNNFTVSFWLRVPKVSASHLE 50

XX
XX ADL63986
XX ADL63986 standard; protein; 122 AA.
XX
XX 03-JUN-2004 (first entry)
XX
XX Chimeric human IL-13 protein with a tetanus toxin p30 peptide SeqID 13.
XX
XX human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX
XX Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
XX Key Location/Qualifiers
XX Peptide 77.97
XX /note= "Tetanus P30 peptide"
XX
XX WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
XX 28-AUG-2003; 2003WO-GB003703.
XX
XX 30-AUG-2002; 2002GB-00020212.
XX
XX 28-FEB-2003; 2003GB-00004672.
XX
XX (GLAX ) GLAXO GROUP LTD.
XX
XX (ASHW/) ASHMAN C.
XX
XX Ashman C, Ellis JH;

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PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
PI
XX
XX WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 7; Page 134; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 122 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 122;
Best Local Similarity 100.0%; Pred. No. 5.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX
XX 1 FNNFTVSFWLRVPKVSASHLE 21
DB 30 FNNFTVSFWLRVPKVSASHLE 50

XX
XX ADL63986
XX ADL63986 standard; protein; 123 AA.
XX
XX 03-JUN-2004 (first entry)
XX
XX Chimeric human IL-13 protein with a tetanus toxin p30 peptide SeqID 13.
XX
XX human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX
XX Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
XX Key Location/Qualifiers
XX Peptide 77.97
XX /note= "Tetanus P30 peptide"
XX
XX WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
XX 28-AUG-2003; 2003WO-GB003703.
XX
XX 30-AUG-2002; 2002GB-00020212.
XX
XX 28-FEB-2003; 2003GB-00004672.
XX
XX (GLAX ) GLAXO GROUP LTD.
XX
XX (ASHW/) ASHMAN C.
XX
XX Ashman C, Ellis JH;

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XX DR WPI; 2004-239121/22.

XX PT New immunogenic composition comprising an interleukin-13 (IL-13) element

XX PT that drives an immune response recognizing human IL-13 and foreign T-cell

XX PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.

XX PS Disclosure; SEQ ID NO 13; 89pp; English.

XX CC This invention relates to a novel immunogenic composition comprising an

XX CC IL-13 (interleukin-13) element that is capable of driving an immune

XX CC response by recognising human IL-13 and one or more foreign T-cell

XX CC epitopes. Specifically, it refers to a method for producing a human

XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX CC a human vaccine. The present invention describes human chimeric IL-13

XX CC sequences as having a similar conformational shape to native human IL-13

XX CC while having sufficient amino acid sequence diversity, attributable to

XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX CC the method results in a reduction in airway hyper-responsiveness (AHR),

XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX CC the airways and skin irritation, as well as reducing the requirement for

XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX CC dermatological and antiasthmatic activities, can be used via gene therapy

XX CC to treat individuals suffering from or susceptible to chronic obstructive

XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX CC sequence is the chimeric human IL-13 protein containing a tetanus p30

XX CC peptide (immunogen 4) of the invention.

XX SQ Sequence 123 AA;

Query Match 100.0%; Score 112; DB 8; Length 123;

Best Local Similarity 100.0%; Pred. No. 5.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 89

ADL63910

ID ADL63910 standard; protein; 123 AA.

XX AC ADL63910;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric human IL-13 protein with a tetanus toxin p30 peptide SeqID 13.

XX KW human; immunogenic; IL-13; interleukin-13; vaccine;

XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;

XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;

XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;

XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;

XX KW chimeric; tetanus p30.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX OS Chimeric.

XX FH Key Location/Qualifiers

XX FT Peptide 77..97

XX FT /note= "Tetanus p30 peptide"

XX FN WO2004019975-A2.

XX PD 11-MAR-2004.

XX PF 28-AUG-2003; 2003WO-GB003729.

XX PR 30-AUG-2002; 2002GB-00020211.

XX PR 28-FEB-2003; 2003GB-00004672.

XX XX

PA (GLAX) GLAXO GROUP LTD.

XX PI Ellis JH, Ashman C;

XX DR WPI; 2004-239122/22.

XX PT New vaccine composition useful for treating asthma, Chronic obstructive

XX PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX PT immunogen generating an immune response against interleukin-13.

XX PS Disclosure; SEQ ID NO 13; 89pp; English.

XX CC This invention relates to a novel immunogenic composition comprising an

XX CC IL-13 (interleukin-13) element that is capable of driving an immune

XX CC response by recognising human IL-13 and one or more foreign T-cell

XX CC epitopes. Specifically, it refers to a method for producing a human

XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX CC a human vaccine. The present invention describes human chimeric IL-13

XX CC sequences as having a similar conformational shape to native human IL-13

XX CC while having sufficient amino acid sequence diversity, attributable to

XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX CC the method results in a reduction in airway hyper-responsiveness (AHR),

XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX CC the airways and skin irritation, as well as reducing the requirement for

XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX CC dermatological and antiasthmatic activities, can be used via gene therapy

XX CC to treat individuals suffering from or susceptible to chronic obstructive

XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX CC sequence is the chimeric human IL-13 protein containing a tetanus p30

XX CC peptide (immunogen 4) of the invention.

XX SQ Sequence 123 AA;

Query Match 100.0%; Score 112; DB 8; Length 123;

Best Local Similarity 100.0%; Pred. No. 5.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 90

ADL97893

ID ADL97893 standard; protein; 123 AA.

XX AC ADL97893;

XX DT 03-JUN-2004 (first entry)

XX DE Murine IL-13/tetanus toxin P30 epitope immunogen 4, SEQ ID NO:13.

XX KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;

XX KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;

XX KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;

XX KW respiratory; anti-allergic; dermatological; mouse; murine;

XX KW T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX OS Mus sp.

XX OS Clostridium tetani.

XX OS Chimeric.

XX FH Key Location/Qualifiers

XX FT Region 77..97

XX FT /note= "Tetanus toxin P30 epitope"

XX FN WO2004019979-A2.

XX PD 11-MAR-2004.

XX PF 28-AUG-2003; 2003WO-GB003721.

XX PR 30-AUG-2002; 2002GB-00020211.

XX PR

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PR 28-FEB-2003; 2003GB-00004672.
XX (GLAX ) GLAXO GROUP LTD.
XX
XX Ellis JH, Ashman C;
XX
XX WPI; 2004-239126/22.
XX
XX Vaccine composition useful for treating asthma, Chronic Obstructive
XX Pulmonary Disease or atopic disorders, e.g. Dermatitis, comprises
XX immunogen generating an immune response against interleukin-13.
XX
XX Disclosure; SEQ ID NO 13; 45pp; English.
XX
XX The invention relates to a vaccine composition for treating asthma or
XX COPD (chronic obstructive pulmonary disease). The vaccine composition
XX comprises an immunogen that is capable of generating an immune response
XX against self interleukin-13 (IL-13) and an adjuvant composition
XX comprising a combination of an immunostimulatory oligonucleotide
XX containing at least one unmethylated CG motif and a saponin. The IL-13
XX immunogen is preferably a human IL-13 supplemented with foreign T-helper
XX epitopes, or is a non-human IL-13 backbone substituted with human IL-13
XX epitopes. The vaccine composition is useful for treating asthma or COPD,
XX or atopic disorders such as hayfever, contact allergies or dermatitis.
XX The present sequence represents a murine IL-13/tetanus toxin P30 epitope
XX immunogen of the invention.
XX
XX Sequence 123 AA;
SQ
Query Match 100.0%; Score 112; DB 8; Length 123;
Best Local Similarity 100.0%; Pred. No. 5.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 91
AAB45496
ID AAB45496 standard; protein; 124 AA.
XX
XX AAB45496;
XX
XX 26-FEB-2001 (first entry)
XX
XX Modified human interleukin-5 SEQ ID NO: 8.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX Homo sapiens.
XX
XX Clostridium tetani.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
XX
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
XX
XX WPI; 2000-672791/65.
XX
XX N-PSDB; AAC68868.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX amelioration of asthma or other chronic allergic conditions.
XX
XX Example 7; Page 141; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
XX eosinophilia, allergic rhinitis and other allergic diseases. These
XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX proteins and their coding sequences to down-regulate IL-5 activity and
XX thus reduce eosinophil numbers. The allergic diseases may be treated
XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX it is possible that they may be used in the treatment of cancer and
XX helminthic infections
XX
XX Sequence 124 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 124;
Best Local Similarity 100.0%; Pred. No. 5.9e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 32 FNNFTVSFWLRVPKVSASHLE 52

RESULT 92
AAB45515
ID AAB45515 standard; protein; 124 AA.
XX
XX AAB45515;
XX
XX 26-FEB-2001 (first entry)
XX
XX Modified human interleukin-5 SEQ ID NO: 30.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX Homo sapiens.
XX
XX Clostridium tetani.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
XX
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
XX
XX WPI; 2000-672791/65.
XX
XX N-PSDB; AAC68868.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX amelioration of asthma or other chronic allergic conditions.
XX
XX Example 7; Page 141; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
XX eosinophilia, allergic rhinitis and other allergic diseases. These
XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX proteins and their coding sequences to down-regulate IL-5 activity and
XX thus reduce eosinophil numbers. The allergic diseases may be treated
XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX it is possible that they may be used in the treatment of cancer and
XX helminthic infections
XX
XX Sequence 124 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 124;
Best Local Similarity 100.0%; Pred. No. 5.9e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 32 FNNFTVSFWLRVVKVSASHLE 52

RESULT 93

AAB45529
 ID AAB45529 standard; protein; 128 AA.

XX AC AAB45529;

XX DT 26-FEB-2001 (first entry)

XX DE Modified murine interleukin-5 SEQ ID NO: 58.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX XX WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX XX WPI; 2000-672791/65.

XX DR N-PSDB; AAC68882.

XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 6; Page 164-165; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 128 AA;

Query Match 100.0%; Score 112; DB 3; Length 128;

Best Local Similarity 100.0%; Pred. No. 6.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 84 FNNFTVSFWLRVVKVSASHLE 104

RESULT 94

AAB45525
 ID AAB45525 standard; protein; 128 AA.

XX AC AAB45525;

XX DT 26-FEB-2001 (first entry)

DE Modified murine interleukin-5 SEQ ID NO: 50.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX XX 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX XX WPI; 2000-672791/65.

XX DR N-PSDB; AAC68878.

XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 3; Page 158; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 128 AA;

Query Match 100.0%; Score 112; DB 3; Length 128;

Best Local Similarity 100.0%; Pred. No. 6.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 57 FNNFTVSFWLRVVKVSASHLE 77

RESULT 95

AAB45508
 ID AAB45508 standard; protein; 128 AA.

XX AC AAB45508;

XX DT 26-FEB-2001 (first entry)

XX DE Modified murine interleukin-5 SEQ ID NO: 20.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

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PR 06-MAY-1999; 99US-0132811P.
XX (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 8; Page 135; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 128 AA;
Query Match 100.0%; Score 112; DB 3; Length 128;
Best Local Similarity 100.0%; Pred. No. 6.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 57 FNNFTVSFWLRVPKVSASHLE 77

RESULT 96
AAB45506
ID AAB45506 standard; protein; 130 AA.
XX
AC AAB45506;
XX
DT 26-FEB-2001 (first entry)
XX Modified murine interleukin-5 SEQ ID NO: 18.
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX Mus musculus.
XX Clostridium tetani.
XX WO200065058-A1.
XX 02-NOV-2000.
XX 19-APR-2000; 2000WO-DK000205.
XX 23-APR-1999; 99DK-00000552.
XX 06-MAY-1999; 99US-0132811P.
XX (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 6; Page 133; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These

```

```

CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 130 AA;
Query Match 100.0%; Score 112; DB 3; Length 130;
Best Local Similarity 100.0%; Pred. No. 6.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 85 FNNFTVSFWLRVPKVSASHLE 105

RESULT 97
AAB45497
ID AAB45497 standard; protein; 130 AA.
XX
AC AAB45497;
XX
DT 26-FEB-2001 (first entry)
XX Modified human interleukin-5 SEQ ID NO: 9.
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX Homo sapiens.
XX Clostridium tetani.
XX WO200065058-A1.
XX 02-NOV-2000.
XX 19-APR-2000; 2000WO-DK000205.
XX 23-APR-1999; 99DK-00000552.
XX 06-MAY-1999; 99US-0132811P.
XX (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 8; Page 125; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 130 AA;
Query Match 100.0%; Score 112; DB 3; Length 130;
Best Local Similarity 100.0%; Pred. No. 6.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 59 FNNFTVSFWLRVPKVSASHLE 79

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RESULT 98
AAB45509
ID AAB45509 standard; protein; 130 AA.
XX
AC AAB45509;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 21.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
XX 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX amelioration of asthma or other chronic allergic conditions.
XX
XX Example 9; Page 136; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
XX eosinophilia, allergic rhinitis and other allergic diseases. These
XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX proteins and their coding sequences to down-regulate IL-5 activity and
XX thus reduce eosinophil numbers. The allergic diseases may be treated
XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX it is possible that they may be used in the treatment of cancer and
XX helminthic infections
XX
XX SQ Sequence 130 AA;
XX
XX Query Match 100.0%; Score 112; DB 3; Length 130;
XX Best Local Similarity 100.0%; Pred. No. 6.2e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 108 FNNFTVSFWLRVPKVSASHLE 128
XX
XX RESULT 99
XX AAB45516
XX ID AAB45516 standard; protein; 130 AA.
XX
XX AC AAB45516;
XX
XX DT 26-FEB-2001 (first entry)
XX
XX DE Modified human interleukin-5 SEQ ID NO: 32.
XX
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX OS Homo sapiens.

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OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
DR N-PSDB; AAC88869.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX amelioration of asthma or other chronic allergic conditions.
XX
XX Disclosure; Page 142-143; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
XX eosinophilia, allergic rhinitis and other allergic diseases. These
XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX proteins and their coding sequences to down-regulate IL-5 activity and
XX thus reduce eosinophil numbers. The allergic diseases may be treated
XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX it is possible that they may be used in the treatment of cancer and
XX helminthic infections
XX
XX SQ Sequence 130 AA;
XX
XX Query Match 100.0%; Score 112; DB 3; Length 130;
XX Best Local Similarity 100.0%; Pred. No. 6.2e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 59 FNNFTVSFWLRVPKVSASHLE 79
XX
XX RESULT 100
XX AAB45528
XX ID AAB45528 standard; protein; 130 AA.
XX
XX AC AAB45528;
XX
XX DT 26-FEB-2001 (first entry)
XX
XX DE Modified murine interleukin-5 SEQ ID NO: 56.
XX
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX OS Mus musculus.
XX OS Clostridium tetani.
XX
XX PN WO200065058-A1.
XX
XX PD 02-NOV-2000.
XX
XX PF 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
XX 06-MAY-1999; 99US-0132811P.
XX
XX PA (MEBI-) M & E BIOTECH AS.
XX
XX PI Klysner S;
XX
XX

```


XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 XX
 XX Ashman C, Ellis JH;
 XX WPI; 2004-239121/22.
 DR
 XX
 XX New immunogenic composition comprising an interleukin-13 (IL-13) element
 PT that drives an immune response recognizing human IL-13 and foreign T-cell
 PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 FT
 XX
 XX Disclosure; SEQ ID NO 14; 89pp; English.
 PS
 XX
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric murine IL-13 protein containing a tetanus p30
 CC peptide (immunogen 5) of the invention.
 XX
 XX Sequence 132 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 132;
 Best Local Similarity 100.0%; Pred. No. 6.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 106
 ADL63988
 ID ADL63988 standard; protein; 132 AA.
 XX
 XX ADL63988;
 AC
 XX
 XX 03-JUN-2004 (first entry)
 DT
 XX
 XX Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 15.
 DE
 XX mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; murine.
 XX
 OS Clostridium tetani.
 OS Mus sp.
 OS Chimeric.
 OS Synthetic.
 XX
 XX Key Location/Qualifiers
 FT Peptide 1..21
 FT /note= "Tetanus P30 peptide"
 FT Misc-difference 32
 FT /note= "Wild type Leu substituted for Val"
 FT Misc-difference 42
 FT /note= "Wild type Ser substituted for Thr"

FT Misc-difference 84 /note= "Wild type Tyr substituted for Phe"
 FT Misc-difference 92 /note= "Wild type Gly substituted for Ala"
 FT Misc-difference 121 /note= "Wild type Ser substituted for Thr"
 FT Misc-difference 125 /note= "Wild type Gln substituted for Asn"
 FT Misc-difference 129 /note= "Wild type His substituted for Arg"
 FT
 XX WO2004019974-A2.
 XX
 XX 11-MAR-2004.
 PD
 XX 28-AUG-2003; 2003WO-GB003703.
 PF
 XX 30-AUG-2002; 2002GB-00020212.
 PR
 XX 28-FEB-2003; 2003GB-00004672.
 PR
 XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 PA
 XX Ashman C, Ellis JH;
 PI
 XX WPI; 2004-239121/22.
 DR
 XX New immunogenic composition comprising an interleukin-13 (IL-13) element
 CC that drives an immune response recognizing human IL-13 and foreign T-cell
 CC epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 PT
 XX Disclosure; SEQ ID NO 15; 89pp; English.
 PS
 XX
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric murine IL-13 protein with humanised amino acid
 CC substitutions containing a tetanus p30 peptide (immunogen 6) of the
 CC invention.
 XX
 XX Sequence 132 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 132;
 Best Local Similarity 100.0%; Pred. No. 6.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 107
 ADL63912
 ID ADL63912 standard; protein; 132 AA.
 XX
 XX ADL63912;
 AC
 XX
 XX 03-JUN-2004 (first entry)
 DT
 XX Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 15.

XX mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; murine.

XX Clostridium tetani.

OS Mus sp.

OS Chimeric.

OS Synthetic.

XX Key Location/Qualifiers
 FH Peptide 1..21

FT /note= "Tetanus P30 peptide"

FT Misc-difference 32 /note= "Wild type Leu substituted for Val"

FT Misc-difference 42 /note= "Wild type Ser substituted for Thr"

FT Misc-difference 84 /note= "Wild type Tyr substituted for Phe"

FT Misc-difference 92 /note= "Wild type Gly substituted for Ala"

FT Misc-difference 121 /note= "Wild type Ser substituted for Thr"

FT Misc-difference 125 /note= "Wild type Gln substituted for Asn"

FT Misc-difference 129 /note= "Wild type His substituted for Arg"

XX WO2004019975-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003729.

XX 30-AUG-2002; 2002GB-00020211.

XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.

XX Ellis JH, Ashman C;

XX WPI; 2004-239122/22.

XX New vaccine composition useful for treating asthma, Chronic obstructive

XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX immunogen generating an immune response against interleukin-13.

XX Disclosure; SEQ ID NO 15; 89pp; English.

XX This invention relates to a novel immunogenic composition comprising an

XX IL-13 (interleukin-13) element that is capable of driving an immune

XX response by recognising human IL-13 and one or more foreign T-cell

XX epitopes. Specifically, it refers to a method for producing a human

XX chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX a human vaccine. The present invention describes human chimeric IL-13

XX sequences as having a similar conformational shape to native human IL-13

XX while having sufficient amino acid sequence diversity, attributable to

XX non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX the method results in a reduction in airway hyper-responsiveness (AHR),

XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX the airways and skin irritation, as well as reducing the requirement for

XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX dermatological and antiasthmatic activities, can be used via gene therapy

XX to treat individuals suffering from or susceptible to chronic obstructive

XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX sequence is the chimeric murine IL-13 protein with humanised amino acid

XX substitution containing a tetanus p30 peptide (immunogen 6) of the

XX invention.

XX Sequence 132 AA;

XX

XX

XX

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XX

RESULT 108

ADL63911

ID ADL63911 standard; protein; 132 AA.

XX AC ADL63911;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 14.

XX KW mouse; immunogenic; IL-13; interleukin-13; vaccine;

XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;

XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;

XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;

XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;

XX KW chimeric; tetanus p30; murine.

XX OS Clostridium tetani.

OS Mus sp.

OS Chimeric.

XX FH Key Location/Qualifiers

FT Peptide 1..21

FT /note= "Tetanus P30 peptide"

XX WO2004019975-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003729.

XX 30-AUG-2002; 2002GB-00020211.

XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.

XX Ellis JH, Ashman C;

XX WPI; 2004-239122/22.

XX New vaccine composition useful for treating asthma, Chronic obstructive

XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX immunogen generating an immune response against interleukin-13.

XX Disclosure; SEQ ID NO 14; 89pp; English.

XX This invention relates to a novel immunogenic composition comprising an

XX IL-13 (interleukin-13) element that is capable of driving an immune

XX response by recognising human IL-13 and one or more foreign T-cell

XX epitopes. Specifically, it refers to a method for producing a human

XX chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX a human vaccine. The present invention describes human chimeric IL-13

XX sequences as having a similar conformational shape to native human IL-13

XX while having sufficient amino acid sequence diversity, attributable to

XX non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX the method results in a reduction in airway hyper-responsiveness (AHR),

XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX the airways and skin irritation, as well as reducing the requirement for

XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX dermatological and antiasthmatic activities, can be used via gene therapy

XX to treat individuals suffering from or susceptible to chronic obstructive

XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX sequence is the chimeric murine IL-13 protein with humanised amino acid

XX substitution containing a tetanus p30 peptide (immunogen 6) of the

XX invention.

XX Sequence 132 AA;

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

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XX

XX

XX

XX

XX

XX

XX

XX

CC peptide (immunogen 5) of the invention.

SQ Sequence 132 AA;

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 109

ADL97894

ID ADL97894 standard; protein; 132 AA.

XX

AC ADL97894;

XX

DT 03-JUN-2004 (first entry)

XX

DE Murine IL-13/tetanus toxin P30 epitope immunogen 5, SEQ ID NO:14.

XX

KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin; asthma; chronic obstructive pulmonary disease; COPD; atopic disorder; hayfever; contact allergy; dermatitis; vaccine; antiasthmatic; respiratory; antiallergic; dermatological; mouse; murine; T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX

OS Mus sp.

OS Clostridium tetani.

OS Chimeric.

XX

FT Key Location/Qualifiers

FT Region 1..21

FT /note= "Tetanus toxin P30 epitope"

FT

XX WO2004019979-A2.

XX 11-MAR-2004.

XX

XX 28-AUG-2003; 2003WO-GB003721.

XX

PF 30-AUG-2002; 2002GB-00020211.

XX

PR 28-FEB-2003; 2003GB-00004672.

XX

XX (GLAX) GLAXO GROUP LTD.

XX

PI Ellis JH, Ashman C;

XX

DR WPI; 2004-239126/22.

XX

XX Vaccine composition useful for treating asthma, Chronic Obstructive

PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises

PT immunogen generating an immune response against interleukin-13.

XX

PS Disclosure; SEQ ID NO 14; 45pp; English.

XX

XX The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 backbone substituted with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis.

XX The present sequence represents a murine IL-13/tetanus toxin P30 epitope immunogen of the invention.

XX

SQ Sequence 132 AA;

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 110

ADL97895

ID ADL97895 standard; protein; 132 AA.

XX

AC ADL97895;

XX

DT 03-JUN-2004 (first entry)

XX

DE Chimeric IL-13/tetanus toxin P30 epitope immunogen 6, SEQ ID NO:15.

XX

KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin; asthma; chronic obstructive pulmonary disease; COPD; atopic disorder; hayfever; contact allergy; dermatitis; vaccine; antiasthmatic; respiratory; antiallergic; dermatological; human; mouse; murine; T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX

OS Homo sapiens.

OS Mus sp.

OS Clostridium tetani.

OS Chimeric.

XX

FT Key Location/Qualifiers

FT Region 1..21

FT /note= "Tetanus toxin P30 epitope"

FT

XX WO2004019979-A2.

XX 11-MAR-2004.

XX

XX 28-AUG-2003; 2003WO-GB003721.

XX

PF 30-AUG-2002; 2002GB-00020211.

XX

PR 28-FEB-2003; 2003GB-00004672.

XX

XX (GLAX) GLAXO GROUP LTD.

XX

PI Ellis JH, Ashman C;

XX

DR WPI; 2004-239126/22.

XX

XX Vaccine composition useful for treating asthma, Chronic Obstructive

PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises

PT immunogen generating an immune response against interleukin-13.

XX

PS Disclosure; SEQ ID NO 15; 45pp; English.

XX

XX The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 backbone substituted with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis.

XX The present sequence represents a chimeric IL-13 (comprising the human IL-13 with murine IL-13 B-cell epitopes)/tetanus toxin P30 epitope immunogen of the invention.

XX

SQ Sequence 132 AA;

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
Best Local Similarity 100.0%; Score 112; DB 8; Length 133;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 111
ADL63985
ID ADL63985 standard; protein; 133 AA.
XX
AC ADL63985;
XX
DT 03-JUN-2004 (first entry)
XX
DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 12.
XX
KW human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Tetanus P30 peptide"
XX
PN WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
PF 28-AUG-2003; 2003WO-GB003703.
XX
PR 30-AUG-2002; 2002GB-00020212.
PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAXO) GLAXO GROUP LTD.
PA (ASHM/) ASHMAN C.
XX
PI Ashman C, Ellis JH;
XX
XX WPI; 2004-239121/22.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
XX that drives an immune response recognizing human IL-13 and foreign T-cell
XX epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 12; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
XX IL-13 (interleukin-13) element that is capable of driving an immune
XX response by recognising human IL-13 and one or more foreign T-cell
XX epitopes. Specifically, it refers to a method for producing a human
XX chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX a human vaccine. The present invention describes human chimeric IL-13
XX sequences as having a similar conformational shape to native human IL-13
XX while having sufficient amino acid sequence diversity, attributable to
XX non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX the method results in a reduction in airway hyper-responsiveness (AHR),
XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX the airways and skin irritation, as well as reducing the requirement for
XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX dermatological and antiasthmatic activities, can be used via gene therapy
XX to treat individuals suffering from or susceptible to chronic obstructive
XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
XX sequence is the chimeric human IL-13 protein containing an N-terminal
XX tetanus p30 peptide (immunogen 3) of the invention.

Seq Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
Best Local Similarity 100.0%; Pred. No. 6.4e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 112
ADL64006
ID ADL64006 standard; protein; 133 AA.
XX
AC ADL64006;
XX
DT 03-JUN-2004 (first entry)
XX
DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 18.
XX
KW human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30; mutant; mutein.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Tetanus P30 peptide"
FT Protein 22..133
FT /note= "IL-13 protein"
XX
FT Misc-difference 28
FT /note= "Wild type Thr substituted for Ser"
XX
FT Misc-difference 31
FT /note= "Wild type Arg substituted for Lys"
XX
FT Misc-difference 38
FT /note= "Wild type Val substituted for Ala"
XX
FT Misc-difference 69
FT /note= "Wild type Glu substituted for Asp"
XX
FT Misc-difference 76
FT /note= "Wild type Met substituted for Ile"
XX
FT Misc-difference 79
FT /note= "Wild type Gly substituted for Ala"
XX
FT Misc-difference 82
FT /note= "Wild type Lys substituted for Arg"
XX
FT Misc-difference 104
FT /note= "Wild type His substituted for Arg"
XX
FT Misc-difference 117
FT /note= "Wild type Lys substituted for Thr"
XX
FT Misc-difference 121
FT /note= "Wild type Leu substituted for Val"
XX
FT Misc-difference 125
FT /note= "Wild type Lys substituted for Arg"
XX
FT Misc-difference 129
FT /note= "Wild type Glu substituted for Gln"
XX
FT Misc-difference 131
FT /note= "Wild type Arg substituted for Thr"
XX
XX WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
XX 28-AUG-2003; 2003WO-GB003703.
XX
XX 30-AUG-2002; 2002GB-00020212.
XX
XX 28-FEB-2003; 2003GB-00004672.
XX

XX (GLAX) GLAXO GROUP LTD.
PA (ASHM/) ASHMAN C.
XX
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
DR N-PSDB; ADL63991.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
PT that drives an immune response recognizing human IL-13 and foreign T-cell
PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 18; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric human IL-13 protein containing non-human amino
CC acid substitutions and an N-terminal tetanus p30 peptide (immunogen 9) of
CC the invention.
XX
XX SQ Sequence 133 AA;

XX Query Match 100.0%; Score 112; DB 8; Length 133;
XX Best Local Similarity 100.0%; Pred. No. 6.4e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX QY 1 FNNFTVSFWLRPKVKSASHLE 21
XX Db 1 FNNFTVSFWLRPKVKSASHLE 21

XX RESULT 113
XX ADL64007
XX ID ADL64007 standard; protein; 133 AA.
XX AC
XX AC ADL64007;
XX
XX 03-JUN-2004 (first entry)
XX
XX Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 19.
XX
XX human; immunogenic; IL-13; interleukin-13; vaccine;
XX airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX chimeric; tetanus p30; mutant; mutein.
XX
XX Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX OS Synthetic.
XX
XX Key Location/Qualifiers
XX FT Peptide 1..21
XX FT Protein 22..133
XX FT /note= "Tetanus P30 peptide"
XX FT /note= "IL-13 protein"

FT Misc-difference 28 /note= "Wild type Thr substituted for Ser"
FT Misc-difference 31 /note= "Wild type Arg substituted for Lys"
FT Misc-difference 32 /note= "Wild type Glu substituted for Ile"
FT Misc-difference 38 /note= "Wild type Val substituted for Ala"
FT Misc-difference 69 /note= "Wild type Glu substituted for Asp"
FT Misc-difference 76 /note= "Wild type Met substituted for Ile"
FT Misc-difference 79 /note= "Wild type Gly substituted for Ala"
FT Misc-difference 82 /note= "Wild type Lys substituted for Arg"
FT Misc-difference 104 /note= "Wild type His substituted for Arg"
FT Misc-difference 117 /note= "Wild type Lys substituted for Thr"
FT Misc-difference 121 /note= "Wild type Leu substituted for Val"
FT Misc-difference 125 /note= "Wild type Lys substituted for Arg"
FT Misc-difference 129 /note= "Wild type Glu substituted for Gln"
FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"
XX
XX WO2004019974-A2.
XX 11-MAR-2004.
XX 28-AUG-2003; 2003WO-GB003703.
XX 30-AUG-2002; 2002GB-00020212.
XX 28-FEB-2003; 2003GB-00004672.
XX (GLAX) GLAXO GROUP LTD.
XX (ASHM/) ASHMAN C.
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
XX N-PSDB; ADL63992.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
XX that drives an immune response recognizing human IL-13 and foreign T-cell
XX epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 19; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
XX IL-13 (interleukin-13) element that is capable of driving an immune
XX response by recognising human IL-13 and one or more foreign T-cell
XX epitopes. Specifically, it refers to a method for producing a human
XX chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX a human vaccine. The present invention describes human chimeric IL-13
XX sequences as having a similar conformational shape to native human IL-13
XX while having sufficient amino acid sequence diversity, attributable to
XX non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX the method results in a reduction in airway hyper-responsiveness (AHR),
XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX the airways and skin irritation as well as reducing the requirement for
XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX dermatological and antiasthmatic activities, can be used via gene therapy
XX to treat individuals suffering from or susceptible to chronic obstructive
XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
XX sequence is the chimeric human IL-13 protein containing non-human amino
XX acid substitutions and an N-terminal tetanus p30 peptide (immunogen 10)
XX of the invention.
XX
XX SQ Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 ||||| ||||| ||||| ||||| |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 114

ID ADL63968 standard; protein; 133 AA.

XX AC ADL63968;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 19.

XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; mutant; mutein.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX OS Chimeric.

XX OS Synthetic.

XX FH Key Location/Qualifiers

FT Peptide 1..21 /note= "Tetanus P30 peptide"

FT Protein 22..133 /note= "IL-13 protein"

FT Misc-difference 28 /note= "Wild type Thr substituted for Ser"

FT Misc-difference 31 /note= "Wild type Arg substituted for Lys"

FT Misc-difference 32 /note= "Wild type Glu substituted for Ile"

FT Misc-difference 38 /note= "Wild type Val substituted for Ala"

FT Misc-difference 69 /note= "Wild type Glu substituted for Asp"

FT Misc-difference 76 /note= "Wild type Met substituted for Ile"

FT Misc-difference 79 /note= "Wild type Gly substituted for Ala"

FT Misc-difference 82 /note= "Wild type Lys substituted for Arg"

FT Misc-difference 104 /note= "Wild type His substituted for Arg"

FT Misc-difference 117 /note= "Wild type Lys substituted for Thr"

FT Misc-difference 121 /note= "Wild type Leu substituted for Val"

FT Misc-difference 125 /note= "Wild type Lys substituted for Arg"

FT Misc-difference 129 /note= "Wild type Glu substituted for Gln"

FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"

XX WO2004019975-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003729.

XX 30-AUG-2002; 2002GB-00020211.

PR 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.

XX PI Ellis JH, Ashman C;

XX WPI; 2004-239122/22.

XX DR N-PSDB; ADL63916.

XX New vaccine composition useful for treating asthma, Chronic obstructive pulmonary disease or atopic disorders, e.g. dermatitis, comprises an immunogen generating an immune response against interleukin-13.

PS Disclosure; SEQ ID NO 19; 89pp; English.

XX This invention relates to a novel immunogenic composition comprising an IL-13 (interleukin-13) element that is capable of driving an immune response by recognising human IL-13 and one or more foreign T-cell epitopes. Specifically, it refers to a method for producing a human chimeric IL-13 immunogen formulated in an appropriate manner to generate a human vaccine. The present invention describes human chimeric IL-13 sequences as having a similar conformational shape to native human IL-13 while having sufficient amino acid sequence diversity, attributable to non-human mammalian species, to enhance its immunogenicity. Accordingly, the method results in a reduction in airway hyper-responsiveness (AHR), mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of the airways and skin irritation, as well as reducing the requirement for inhaled corticosteroids (ICS). As such, these compositions, which exhibit dermatological and antiasthmatic activities, can be used via gene therapy to treat individuals suffering from or susceptible to chronic obstructive pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide sequence is the chimeric human IL-13 protein containing non-human amino acid substitutions and an N-terminal tetanus p30 peptide (immunogen 10) of the invention.

XX SQ Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;

Best Local Similarity 100.0%; Pred. No. 6.4e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

||||| ||||| ||||| ||||| |||||

Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 115

ADL63909

ID ADL63909 standard; protein; 133 AA.

XX AC ADL63909;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 12.

XX KW human; immunogenic; IL-13; interleukin-13; vaccine;

XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;

XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;

XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;

XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;

XX KW chimeric; tetanus p30.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX OS Chimeric.

XX FH Key Location/Qualifiers

FT Peptide 1..21 /note= "Tetanus P30 peptide"

FT WO2004019975-A2.

PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 FI WPI; 2004-239122/22.
 DR New vaccine composition useful for treating asthma, Chronic obstructive
 XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; SEQ ID NO 12; 89pp; English.
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing an N-terminal
 CC tetanus p30 peptide (immunogen 3) of the invention.
 XX Sequence 133 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 116
 ADL63967
 ID ADL63967 standard; protein; 133 AA.
 XX
 AC ADL63967;
 XX
 DT 03-JUN-2004 (first entry)
 XX Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 18.
 DE human; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..21

FT /note= "Tetanus P30 peptide"
 FT 22..133
 FT /note= "IL-13 protein"
 FT Misc-difference 28 /note= "Wild type Thr substituted for Ser"
 FT Misc-difference 31 /note= "Wild type Arg substituted for Lys"
 FT Misc-difference 38 /note= "Wild type Val substituted for Ala"
 FT Misc-difference 69 /note= "Wild type Glu substituted for Asp"
 FT Misc-difference 76 /note= "Wild type Met substituted for Ile"
 FT Misc-difference 79 /note= "Wild type Gly substituted for Ala"
 FT Misc-difference 82 /note= "Wild type Lys substituted for Arg"
 FT Misc-difference 104 /note= "Wild type His substituted for Arg"
 FT Misc-difference 117 /note= "Wild type Lys substituted for Thr"
 FT Misc-difference 121 /note= "Wild type Leu substituted for Val"
 FT Misc-difference 125 /note= "Wild type Lys substituted for Arg"
 FT Misc-difference 129 /note= "Wild type Glu substituted for Gln"
 FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"
 XX
 XX WO2004019975-A2.
 DN 11-MAR-2004.
 PD 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 WPI; 2004-239122/22.
 DR N-PSDB; ADL63915.
 XX
 XX New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; SEQ ID NO 18; 89pp; English.
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing non-human amino
 CC acid substitutions and an N-terminal tetanus p30 peptide (immunogen 9) of
 CC the invention.
 XX Sequence 133 AA;
 SQ

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 117

ADL97937
 ID ADL97937 standard; protein; 133 AA.

XX AC ADL97937;
 XX 03-JUN-2004 (first entry)
 XX Human IL-13 mutant/tetanus toxin P30 epitope immunogen 10, SEQ ID NO:19.
 KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.

XX WO2004019979-A2.
 XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003721.
 XX 30-AUG-2002; 2002GB-00020211.
 XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 WPI: 2004-239126/22.
 N-PSDB; ADL97899.

Vaccine composition useful for treating asthma, Chronic Obstructive Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises immunogen generating an immune response against interleukin-13.
 Disclosure; SEQ ID NO 19; 45pp; English.

The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 supplemented with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis. The present sequence represents a further mutated version of human IL-13 immunogen 1 and the tetanus toxin P30 epitope.

SQ Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 118

ADL97936
 ID ADL97936 standard; protein; 133 AA.

XX AC ADL97936;
 XX 03-JUN-2004 (first entry)
 XX Human IL-13 mutant/tetanus toxin P30 epitope immunogen 9, SEQ ID NO:18.
 KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.

XX WO2004019979-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003721.
 XX 30-AUG-2002; 2002GB-00020211.
 XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 WPI: 2004-239126/22.
 N-PSDB; ADL97899.

Vaccine composition useful for treating asthma, Chronic Obstructive Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises immunogen generating an immune response against interleukin-13.
 Disclosure; SEQ ID NO 18; 45pp; English.

The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 supplemented with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis. The present sequence represents a human IL-13-derived immunogen of the invention which comprises human IL-13 immunogen 1 (ADL97933 and the tetanus toxin P30 epitope.

SQ Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 119
 ADL97892
 ID ADL97892 standard; protein; 133 AA.
 XX
 AC ADL97892;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Human IL-13/tetanus toxin P30 epitope immunogen 3, SEQ ID NO:12.
 XX
 KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; anti-allergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS
 FT Key Location/Qualifiers
 FT Region 1..21
 FT /note= "Tetanus toxin P30 epitope"
 XX
 PN WO2004019979-A2.
 XX
 PD 11-MAR-2004.
 XX
 PF 28-AUG-2003; 2003WO-GB003721.
 XX
 PR 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX
 PA (GLAX) GLAXO GROUP LTD.
 XX
 PI Ellis JH, Ashman C;
 XX WPI; 2004-239126/22.
 XX
 PT Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. Dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX
 PS Disclosure; SEQ ID NO 12; 45pp; English.
 XX
 CC The invention relates to a vaccine composition for treating asthma or
 CC COPD (chronic obstructive pulmonary disease). The vaccine composition
 CC comprises an immunogen that is capable of generating an immune response
 CC against self interleukin-13 (IL-13) and an adjuvant composition
 CC comprising a combination of an immunostimulatory oligonucleotide
 CC containing at least one unmethylated CG motif and a saponin. The IL-13
 CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
 CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
 CC epitopes. The vaccine composition is useful for treating asthma or COPD,
 CC or atopic disorders such as hayfever, contact allergies or dermatitis.
 CC The present sequence represents a human IL-13/tetanus toxin P30 epitope
 CC immunogen of the invention.
 XX
 SQ Sequence 133 AA;
 Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 RESULT 120
 AAB49089
 ID AAB49089 standard; protein; 136 AA.
 XX

AC AAB49089;
 XX
 DT 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 XX
 DE Amyloid beta tetanus toxoid/HA/CS fusion protein, SEQ ID NO:25.
 XX
 KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Influenza virus.
 OS Plasmodium falciparum.
 OS Chimeric.
 XX
 PN WO200072876-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 01-JUN-2000; 2000WO-US015239.
 XX
 PR 01-JUN-1999; 99US-0137010P.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB;
 XX WPI; 2001-070921/08.
 XX
 PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.
 XX
 PS Disclosure; Page 46; 140pp; English.
 XX
 CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)
 XX
 SQ Sequence 136 AA;
 Query Match 100.0%; Score 112; DB 4; Length 136;

Best Local Similarity 100.0%; Pred. No. 6.5e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 52 FNNFTVSFWLRVPKVSASHLE 72

RESULT 121
AAB45510
ID AAB45510 standard; protein; 139 AA.
XX
AC AAB45510;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 22.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
XX
XX WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 10; Page 137; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 139 AA;
XX
XX Query Match 100.0%; Score 112; DB 3; Length 139;
XX Best Local Similarity 100.0%; Pred. No. 6.7e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 117 FNNFTVSFWLRVPKVSASHLE 137

RESULT 122
AAB45499
ID AAB45499 standard; protein; 141 AA.
XX
XX AAB45499;
XX
XX 26-FEB-2001 (first entry)
XX

DE Modified human interleukin-5 SEQ ID NO: 11.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
XX 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Klysner S;
XX
XX WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 10; Page 127; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 141 AA;
XX
XX Query Match 100.0%; Score 112; DB 3; Length 141;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 119 FNNFTVSFWLRVPKVSASHLE 139

RESULT 123
AAY49252
ID AAY49252 standard; protein; 143 AA.
XX
XX AAY49252;
XX
XX 07-FEB-2000 (first entry)
XX
XX N6 polypeptide carrier protein construct amino acid sequence.
XX
XX Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
KW encapsulated bacteria.
XX
XX Synthetic.
XX
XX WO9955730-A2.
XX
XX 04-NOV-1999.
XX
XX 27-APR-1999; 99WO-IB000844.
XX
XX 27-APR-1998; 98GB-00008932.
XX
XX (CHIR-) CHIRON SPA.
XX

XX PI Rappuoli R, Grandi G;
 XX WPI; 2000-023325/02.
 XX N-PSDB; AAZ31414.
 XX
 PT Carrier proteins containing CD4+ epitopes useful for protecting against
 PT diseases caused by encapsulated bacteria.
 XX
 XX Disclosure; Fig 2; 76pp; English.
 XX
 CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. The present sequence represents the amino acid sequence of N6
 CC polypeptide carrier protein construct
 XX
 SQ Sequence 143 AA;
 Query Match 100.0%; Score 112; DB 3; Length 143;
 Best Local Similarity 100.0%; Pred. No. 6.9e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 103 FNNFTVSFWLRVPKVSASHLE 123
 RESULT 124
 AAB45530
 ID AAB45530 standard; protein; 145 AA.
 AC AAB45530;
 XX 26-FEB-2001 (first entry)
 DT Modified murine interleukin-5 SEQ ID NO: 60.
 DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 KW Mus musculus.
 OS Clostridium tetani.
 XX WO200065058-A1.
 XX 02-NOV-2000.
 XX 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Klysner S;
 XX WPI; 2000-672791/65.
 DR N-PSDB; AAC68883.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 12; Page 166-167; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 145 AA;
 Query Match 100.0%; Score 112; DB 3; Length 145;
 Best Local Similarity 100.0%; Pred. No. 7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 101 FNNFTVSFWLRVPKVSASHLE 121
 RESULT 125
 AAB45522
 ID AAB45522 standard; protein; 147 AA.
 AC AAB45522;
 XX 26-FEB-2001 (first entry)
 DT Modified human interleukin-5 SEQ ID NO: 44.
 DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 KW Homo sapiens.
 OS Clostridium tetani.
 XX WO200065058-A1.
 XX 02-NOV-2000.
 XX 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Klysner S;
 XX WPI; 2000-672791/65.
 DR N-PSDB; AAC68875.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 12; Page 153; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 147 AA;
 Query Match 100.0%; Score 112; DB 3; Length 147;
 Best Local Similarity 100.0%; Pred. No. 7.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21
 ID AAW81333
 DB 103 FNNFTVSFVLRLVPKVSASHLE 123

RESULT 126
 AAW81333
 ID AAW81333 standard; protein; 158 AA.

XX AC AAW81333;
 XX DT 21-APR-1999 (first entry)
 XX DE TNF30-2, a TNF-alpha analogue.
 XX KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 XX KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 XX KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 XX KW asthma.

XX OS Synthetic.
 XX OS Homo sapiens.
 XX FN WO9846642-A1.
 XX PD 22-OCT-1998.
 XX PP 15-APR-1998; 98WO-DK000157.
 XX PR 15-APR-1997; 97DK-00000418.
 XX PR 24-APR-1997; 97US-0044187P.
 XX PA (PERR) FARM LAB FERRING AS.

XX FI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX DR WPI; 1998-594561/50.
 XX DR N-PSDB; AAV68422.

XX PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX PS Claim 16; Page 76-77; 134pp; English.

XX CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 XX asthma

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21
 DB 41 FNNFTVSFVLRLVPKVSASHLE 61

RESULT 127

AAW81335
 ID AAW81335 standard; protein; 158 AA.

XX AC AAW81335;
 XX DT 21-APR-1999 (first entry)
 XX DE TNF30-4, a TNF-alpha analogue.

XX KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 XX KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 XX KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 XX KW asthma.

XX OS Synthetic.
 XX OS Homo sapiens.
 XX FN WO9846642-A1.
 XX PD 22-OCT-1998.

XX PP 15-APR-1998; 98WO-DK000157.
 XX PR 15-APR-1997; 97DK-00000418.
 XX PR 24-APR-1997; 97US-0044187P.

XX PA (PERR) FARM LAB FERRING AS.

XX FI Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX DR WPI; 1998-594561/50.
 XX DR N-PSDB; AAV68424.

XX PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX PS Example 1; Page 80; 134pp; English.

XX CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 XX asthma

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21
 DB 108 FNNFTVSFVLRLVPKVSASHLE 128

RESULT 128

AAW81336
 ID AAW81336 standard; protein; 158 AA.

XX AC AAW81336;
 XX

PN W09846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PF 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (PERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68423.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS Claim 14; Page 78; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 65 FNNFTVSFWLRVPKVSASHLE 85
 RESULT 131
 ABB07282
 ID ABB07282 standard; protein; 158 AA.
 XX
 AC ABB07282;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF30-1.
 XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF30-1.
 XX
 OS Homo sapiens.
 XX
 XX WO200197837-A1.
 PN
 XX
 PD 27-DEC-2001.
 XX
 PF 20-JUN-2001; 2001WO-DK000431.
 XX
 XX

PR 21-JUN-2000; 2000DK-00000966.
 XX
 PA (PERR) FERRING BV.
 XX
 PI Olesen OF, Balchen T, Bouman MHEM;
 XX
 DR WPI; 2002-114542/15.
 DR N-PSDB; ABA94392.
 XX
 PT Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 48-49; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self-
 CC protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-1
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 11 FNNFTVSFWLRVPKVSASHLE 31
 RESULT 132
 ABB07279
 ID ABB07279 standard; protein; 158 AA.
 XX
 AC ABB07279;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF30-5.
 XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF30-5.
 XX
 OS Homo sapiens.
 XX
 XX WO200197837-A1.
 PN
 XX
 PD 27-DEC-2001.
 XX
 PF 20-JUN-2001; 2001WO-DK000431.
 XX
 XX 21-JUN-2000; 2000DK-00000966.
 PR
 XX (PERR) FERRING BV.
 XX
 PI Olesen OF, Balchen T, Bouman MHEM;
 XX
 DR WPI; 2002-114542/15.
 XX

DR N-PSDB; ABA94389.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

XX Claim 21; Page 42-43; 55pp; English.

XX The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self CC -protein-mediated pathology such as an inflammatory disease, rheumatoid CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a CC self-protein such as TNF (tumour necrosis factor)-alpha in a human CC subject. (I) comprising cetylpyridinium chloride as a component is useful CC for immunisation of a human subject or for treatment of a human CC inflammatory disease. The present sequence represents a human TNF-alpha CC analogue TNF30-5

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 133 FNNFTVSFWLRVPKVSASHLE 153

RESULT 133

ABB07278

ID ABB07278 standard; protein; 158 AA.

XX AC ABB07278;

XX DT 26-MAR-2002 (first entry)

XX DE Human TNF-alpha analogue TNF30-2.

XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cyostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 TNF30-2.

XX OS Homo sapiens.

XX WO200197837-A1.

XX PD 27-DEC-2001.

XX PF 20-JUN-2001; 2001WO-DK000431.

XX PR 21-JUN-2000; 2000DK-00000966.

XX PA (FERR) FERRING BV.

XX PI Olesen OF, Balchen T, Bouman MHEM;

XX WPI; 2002-114542/15.

XX DR N-PSDB; ABA94388.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

XX

PS Claim 21; Page 41; 55pp; English.

XX The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self CC -protein-mediated pathology such as an inflammatory disease, rheumatoid CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a CC self-protein such as TNF (tumour necrosis factor)-alpha in a human CC subject. (I) comprising cetylpyridinium chloride as a component is useful CC for immunisation of a human subject or for treatment of a human CC inflammatory disease. The present sequence represents a human TNF-alpha CC analogue TNF30-2

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 41 FNNFTVSFWLRVPKVSASHLE 61

RESULT 134

ABB07274

ID ABB07274 standard; protein; 158 AA.

XX AC ABB07274;

XX DT 26-MAR-2002 (first entry)

XX DE Human TNF-alpha analogue TNF30-3.

XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cyostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 TNF30-3.

XX OS Homo sapiens.

XX WO200197837-A1.

XX PD 27-DEC-2001.

XX PF 20-JUN-2001; 2001WO-DK000431.

XX PR 21-JUN-2000; 2000DK-00000966.

XX PA (FERR) FERRING BV.

XX PI Olesen OF, Balchen T, Bouman MHEM;

XX WPI; 2002-114542/15.

XX DR N-PSDB; ABA94384.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

XX Claim 21; Page 33-34; 55pp; English.

XX The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self

CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (II) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-3

XX Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 65 FNNFTVSFWLRVPKVSASHLE 85

RESULT 135

ABB07283
 ID ABB07283 standard; protein; 158 AA.

XX
 AC ABB07283;

XX
 DT 26-MAR-2002 (first entry)

XX
 DE Human TNF-alpha analogue TNF30-4.

XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antitumor; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteoprotective; human;
 KW TNF30-4.

OS Homo sapiens.

XX
 PN WO200197837-A1.

XX
 PD 27-DEC-2001.

XX
 PF 20-JUN-2001; 2001WO-DK000431.

XX
 PR 21-JUN-2000; 2000DK-00000966.

XX
 PA (FERR) FERRING BV.

XX
 PI Olesen OF, Balchen T, Bouman MHEM;

XX
 DR WPI; 2002-114542/15.

XX
 DR N-PSDB; ABA94393.

XX
 PT Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.

XX
 PS Claim 21; Page 50-51; 55pp; English.

XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (II) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human

CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-4

XX Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 108 FNNFTVSFWLRVPKVSASHLE 128

RESULT 136

AAB20153
 ID AAB20153 standard; protein; 160 AA.

XX
 AC AAB20153;

XX
 DT 30-APR-2001 (first entry)

XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 ext.

XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

OS Homo sapiens.

OS Clostridium tetani.

OS Synthetic.

OS Chimeric.

PH Key Location/Qualifiers

FT Region 1..15 /note= "identical to residues 215-230 of human GDF-8"

FT Region 16..36 /note= "tetanus toxoid P30 epitope"

FT Region 37..51 /note= "tetanus toxoid P2 epitope"

FT Region 52..160 /note= "identical to residues 267-375 of human GDF-8"

FT Misc-difference 124 /note= "Cys-124 may be substituted by Ser to avoid

FT Misc-difference 141..142 /note= "Optionally replaced by Glu-Gly"

XX WO200105820-A2.

XX
 PD 25-JAN-2001.

XX
 PF 20-JUL-2000; 2000WO-DK000413.

XX
 PR 20-JUL-1999; 99DK-00001014.

XX
 PR 26-JUL-1999; 99US-0145275P.

XX
 PA (MEBI-) M & E BIOTECH AS.

XX
 PI Halkier T, Mouritsen S, Klysner S;

XX
 PI WPI; 2001-112680/12.

XX
 PT Increasing the muscle mass of animals used in meat production by down

XX
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal

XX
 PT through induction of anti-GDF-8 antibody production.

XX
 PS Example 1; Page 107-108; 110pp; English.

XX
 CC The present sequence is that of AutoVac construct GDF-8 ext, which

XX
 CC consists of the C-terminal 160 amino acids of human growth

XX
 CC differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36

XX
 CC substituted by the promiscuous tetanus toxin T-cell epitope P30 (see

CC AAB20144) and residues 37-51 substituted by tetanus toxin T-cell epitope
 CC P2 (see AAB20143). It is an object of the invention to produce a
 CC recombinant therapeutic vaccine that is capable of effecting down-
 CC regulation of GDF-8 in order to increase the muscle growth rate of farm
 CC animals. The vaccines (see AAB20145-53) are capable of breaking
 CC autotolerance against autologous GDF-8. They comprise the C-terminal
 CC portion of human GDF-8 in which a portion of the native sequence is
 CC replaced by a T-cell epitope such as P30, with minimal disturbance of the
 CC authentic 3-dimensional structure of the protein. Nucleic acids encoding
 CC the GDF-8 variants can be used for genetic immunisation of the animals.
 CC Down-regulation of GDF-8 activity can increase muscle mass by up to at
 CC least 45% in cattle, pigs and poultry used for meat production, reducing
 CC the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
 CC treat human diseases such as cancer cachexia where muscle atrophy is
 CC pronounced and for patients suffering from acute and chronic heart
 CC failure

XX SQ Sequence 160 AA;

Query Match 100.0%; Score 112; DB 4; Length 160;
 Best Local Similarity 100.0%; Pred. No. 7.9e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 16 FNNFTVSFWLRVPKVSASHLE 36

RESULT 137

AY84426
 ID AAY84426 standard; protein; 173 AA.

XX AC AAY84426;

XX DT 25-JUL-2000 (first entry)

XX DE An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion protein.

KW Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption.

XX Synthetic.

OS Clostridium tetani.

OS Mus musculus.

XX Key Location/Qualifiers

FT Peptide 1..14

FT Protein /note= "His tag"

FT Peptide 15..77

FT Peptide /note= "residues 158-220 of murine OPGL"

FT Protein /note= "tetanus toxoid P30 epitope"

FT Protein 99..173

FT Protein /note= "residues 242-316 of murine OPGL"

XX WO200015807-A1.

XX 23-MAR-2000.

XX 13-SEP-1999; 99WO-DK000481.

XX 15-SEP-1998; 98DK-00001164.

XX 02-OCT-1998; 98US-0102896P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Haaning J;

XX WEI; 2000-271444/23.

XX N-PSDB; AAZ99973.

PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.

XX Example; Page 102; 110pp; English.

XX The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P30 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption

XX SQ Sequence 173 AA;

Query Match 100.0%; Score 112; DB 3; Length 173;

Best Local Similarity 100.0%; Pred. No. 8.6e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 78 FNNFTVSFWLRVPKVSASHLE 98

RESULT 138

AY84423

ID AAY84423 standard; protein; 188 AA.

XX AC AAY84423;

XX DT 25-JUL-2000 (first entry)

XX DE An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion protein.

KW Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption.

XX Synthetic.

OS Clostridium tetani.

OS Mus musculus.

XX Key Location/Qualifiers

FT Peptide 1..14

FT Protein /note= "His tag"

FT Protein 15..112

FT Peptide /note= "residues 158-255 of murine OPGL"

FT Peptide 113..133

FT Protein /note= "tetanus toxoid P30 epitope"

FT Protein 134..188

FT Protein /note= "residues 262-316 of murine OPGL"

XX WO200015807-A1.

XX 23-MAR-2000.

XX 13-SEP-1999; 99WO-DK000481.

XX 15-SEP-1998; 98DK-00001164.

XX 02-OCT-1998; 98US-0102896P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Haaning J;

XX WPI; 2000-271444/23.
 DR N-PSDB; AAZ99970.
 XX
 PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.
 XX
 PS Example; Page 94-95; 110pp; English.

XX The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P30 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption

XX SQ Sequence 188 AA;

Query Match 100.0%; Score 112; DB 3; Length 188;
 Best Local Similarity 100.0%; Pred. No. 9.5e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 113 FNNFTVSFWLRVPKVSASHLE 133

RESULT 139

AAO30489
 ID AAO30489 standard; protein; 194 AA.

XX AAO30489;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant, TNF34-P30-P2.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW mutein; variant; tetanus toxoid; epitope.

XX Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key	Location/Qualifiers
Region	1..109
FT	/note= "Human TNF"
FT	Region 110..130
FT	/note= "Tetanus toxoid P30 epitope"
FT	Region 131..145
FT	/note= "Tetanus toxoid P2 epitope"
FT	Region 146..194
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX

PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.

XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 DR WPI; 2003-449558/42.
 XX

PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 23; Page 159-160; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
 CC illustrate the method of the invention

XX SQ Sequence 194 AA;

Query Match 100.0%; Score 112; DB 6; Length 194;
 Best Local Similarity 100.0%; Pred. No. 9.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 110 FNNFTVSFWLRVPKVSASHLE 130

RESULT 140

AAO30488
 ID AAO30488 standard; protein; 194 AA.

XX AAO30488;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant, TNF34-P2-P30.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW mutein; variant; tetanus toxoid; epitope.

XX Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key	Location/Qualifiers
Region	2..109
FT	/note= "Human TNF"
FT	Region 110..124
FT	/note= "Tetanus toxoid P2 epitope"
FT	Region 125..145
FT	/note= "Tetanus toxoid P30 epitope"
FT	Region 146..194
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX

PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S. S.
 PA (NIEL/) NIELSEN F. S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX WPI; 2003-449558/42.
 XX
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 23; Page 158; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
 CC illustrate the method of the invention
 XX
 SQ Sequence 194 AA;
 Query Match 100.0%; Score 112; DB 6; Length 194;
 Best Local Similarity 100.0%; Pred. NO. 9.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 125 FNNFTVSFWLRVPKVSASHLE 145
 |||||
 RESULT 141
 ADH50816
 ID ADH50816 standard; protein; 209 AA.
 XX
 AC ADH50816;
 XX
 DT 25-MAR-2004 (first entry)
 XX
 DE Membrane IgB-tetanus toxoid construct, allergy vaccine.
 XX
 KW IgE; antibody; antiallergic; vaccine; antiasthmatic; antiinflammatory;
 KW dermatological; immunosuppressive; tetanus toxoid; human.
 XX
 OS Chimeric.
 OS Synthetic.
 OS Clostridium tetani.
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..18
 FT /label= Signal peptide
 FT /note= "Human IgE leader"
 FT Domain 19..139
 FT /label = mIGE
 FT Cleavage-site 140..147
 FT /note= "Protease cleavage site"
 FT Domain 148..174
 FT /label = TTP
 FT /note= "Tetanus toxin precursor (aa73-99)"
 FT Cleavage-site 175..182
 FT /note= "Protease cleavage site"
 FT Domain 183..203
 FT /label = p30TT
 FT /note= "Tetanus toxin subunit p30 (aa947-967)"
 FT Region 204..209
 FT /note= "6His tag"

PN WO2004000217-A2.
 XX
 PD 31-DEC-2003.
 XX
 PF 20-JUN-2003; 2003WO-US019383.
 XX
 PR 20-JUN-2002; 2002US-0390304P.
 XX
 PA (TYPE-) UNIV PENNSYLVANIA.
 XX
 PI Levinson AI, Calarota S, Weiner DB, Otero M;
 XX WPI; 2004-071666/07.
 DR N-PSDB; ADH50815.
 XX
 PT New protein comprising at least one epitope of membrane immunoglobulin E
 PT (IgE) and being free of epitopes of serum IgE, useful for treating an IgE
 PT mediated allergic disease or condition, e.g. asthma, allergic rhinitis
 PT or urticaria.
 XX
 PS Example 1; SEQ ID NO 6; 37pp; English.
 XX
 CC The present sequence is that of a fusion construct comprising human
 CC membrane IgE (mIGE) fused at its N-terminal end to a human IgE leader
 CC sequence to enhance protein expression, and fused at its C-terminal end
 CC via a proteolytic cleavage site to tetanus toxoid (TT) Th epitope to
 CC enhance immune response, and a 6His tag sequence. A plasmid comprising
 CC DNA encoding this fusion protein was used as a DNA vaccine to immunise
 CC HLA-A2 mice. Epitope-specific responses were observed. The DNA is an
 CC example of nucleic acid molecules of the invention that encode a mIGE
 CC epitope that is free of serum IgE epitopes and which optionally includes
 CC the TT Th epitope. Such nucleic acids are used in vaccine compositions
 CC for treating an individual susceptible to, or having, an IgE mediated
 CC allergic disease, e.g. asthma, allergic rhinitis, atopic dermatitis,
 CC anaphylaxis or urticaria.
 XX
 SQ Sequence 209 AA;
 Query Match 100.0%; Score 112; DB 8; Length 209;
 Best Local Similarity 100.0%; Pred. NO. 1.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 183 FNNFTVSFWLRVPKVSASHLE 203
 |||||
 RESULT 142
 AAY92665
 ID AAY92665 standard; peptide; 216 AA.
 XX
 AC AAY92665;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE MUC-1 analogue containing foreign epitopes.
 XX
 KW Mucin repeat; MUC-1 analogue; vaccination; self-protein; cancer;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Peptide 61..75
 FT /label= P2
 FT Peptide 136..156
 FT /label= P30
 FT /note= "q"
 XX
 PN WO200020027-A2.
 XX
 PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.
 XX PR 05-OCT-1998; 98DK-00001261.
 XX PR 20-OCT-1998; 98US-0105011P.
 XX PA (MEBI-) M & E BIOTECH AS.
 XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 XX PI Gautam A, Birk P, Karlsson G;
 XX PR WPI; 2000-349917/30.
 XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX PT antigens for the treatment of breast and prostate cancer.
 XX PS Example 4; Page; 220pp; English.
 XX CC This is an immunogenized MUC-1 analogue containing foreign epitopes P2
 CC and P30. Immunogenic analogues of MUC-1 and, e.g. human prostate specific
 CC membrane antigen (hPSM) can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms (see features table). 10 regions
 CC suitable for the insertion of foreign T helper epitopes were identified.
 CC The method is used for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (self-proteins), e.g. hPSM, heregulin 2 (Her2)
 CC and/or fibroblast growth factor 8b (FGF8b). The method comprises
 CC effecting simultaneous presentation by antigen producing cells (APCs) of
 CC the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence does not appear in
 CC the specification. It was made using the mucin repeat sequence
 CC (AA92664), P2 and P30 (AA92625-26), which appear on pages 220, 213 and
 XX CC 214 respectively, of the specification
 XX SQ Sequence 216 AA;
 Query Match 100.0%; Score 112; DB 3; Length 216;
 Best Local Similarity 100.0%; Pred. No. 1.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 136 FNNFTVSFWLRVPKVSASHLE 156
 RESULT 143
 AAY49253
 ID AAY49253 standard; protein; 218 AA.
 XX AC AAY49253;
 XX DT 07-FEB-2000 (first entry)
 XX DE N10 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX DT 07-FEB-2000 (first entry)
 XX DE N10 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen; N11;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 diseases caused by encapsulated bacteria.

PF 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX PR WPI; 2000-023325/02.
 XX PR N-PSDB; AAZ31415.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 XX PT diseases caused by encapsulated bacteria.
 XX PS Disclosure; Fig 2; 76pp; English.
 XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. The present sequence represents the amino acid sequence of N10
 XX CC polypeptide carrier protein construct
 XX SQ Sequence 218 AA;
 Query Match 100.0%; Score 112; DB 3; Length 218;
 Best Local Similarity 100.0%; Pred. No. 1.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 103 FNNFTVSFWLRVPKVSASHLE 123
 RESULT 144
 AAY49254
 ID AAY49254 standard; protein; 240 AA.
 XX AC AAY49254;
 XX DT 07-FEB-2000 (first entry)
 XX DE N11 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen; N11;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX DT 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX PR WPI; 2000-023325/02.
 XX PR N-PSDB; AAZ31416.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 XX PT diseases caused by encapsulated bacteria.

XX PS Disclosure; Fig 7; 76pp; English.

XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell

CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The

CC carrier protein can be prepared by expressing a vector comprising a

CC nucleic acid molecule encoding the protein, in a host cell and recovering

CC the expressed protein. The carrier protein can also be produced by (a)

CC constructing oligonucleotide molecules that encode peptide epitopes; (b)

CC annealing the oligonucleotides to form duplexes; (c) introducing the

CC duplexes into an expression vector; (d) introducing the expression vector

CC into a host cell; and (e) isolating the fusion protein produced from a

CC culture of the host cells. The carrier protein can be used as a

CC protective immunogen in the control of diseases caused by encapsulated

CC bacteria. The present sequence represents the amino acid sequence of N11

CC polypeptide carrier protein construct

XX SQ Sequence 240 AA;

Query Match 100.0%; Score 112; DB 3; Length 240;

Best Local Similarity 100.0%; Pred. No. 1.3e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 103 FNNFTVSFWLRVPKVSASHLE 123

RESULT 145

AAB20152

ID AAB20152 standard; protein; 254 AA.

AC AAB20152;

DT 30-APR-2001 (first entry)

DE Growth differentiation factor 8 AutoVac construct GDF-8 dimer.

KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;

KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;

KW cardiant; human; mutant; mutein.

OS Homo sapiens.

OS Clostridium tetani.

OS Synthetic.

OS Chimeric.

FH Key Location/Qualifiers

FT Region 1..109

FT Misc-difference /note= "109 C-terminal residues of human GDF-8"

FT Region 90..91

FT Region /note= "optionally replaced by Glu-Gly"

FT Region 110..124

FT Region /note= "tetanus toxoid P2 epitope"

FT Region 125..145

FT Region /note= "tetanus toxoid P30 epitope"

FT Region 146..254

FT Misc-difference /note= "109 C-terminal residues of human GDF-8"

FT Region 235..236

FT Region /note= "optionally replaced by Glu-Gly"

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

PI

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down

PT regulating growth differentiation factor 8 (GDF-8) activity in the animal

PT through induction of anti-GDF-8 antibody production.

XX Example 1; Page 105-106; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 dimer comprising

CC 2 copies of the 109-amino acid C-terminal region of human growth

CC differentiation factor 8 (GDF-8, see AAB20141) covalently connected

CC through the P2 and P30 T-cell epitopes (see AAB20143-44) of tetanus

CC toxin. It is an object of the invention to produce a recombinant

CC therapeutic vaccine that is capable of effecting down-regulation of GDF-8

CC in order to increase the muscle growth rate of farm animals. The vaccines

CC (see AAB20145-53) are capable of breaking autotolerance against

CC autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in

CC which a portion of the native sequence is replaced by a T-cell epitope

CC such as P30, with minimal disturbance of the authentic 3-dimensional

CC structure of the protein. Nucleic acids encoding the GDF-8 variants can

CC be used for genetic immunisation of the animals. Down-regulation of GDF-8

CC activity can increase muscle mass by up to at least 45% in cattle, pigs

CC and poultry used for meat production, reducing the need for antibiotic

CC feed-additives. Anti-GDF8 vaccines can be used to treat human diseases

CC such as cancer cachexia where muscle atrophy is pronounced and for

CC patients suffering from acute and chronic heart failure

XX SQ Sequence 254 AA;

Query Match 100.0%; Score 112; DB 4; Length 254;

Best Local Similarity 100.0%; Pred. No. 1.3e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 125 FNNFTVSFWLRVPKVSASHLE 145

RESULT 146

AAO30457

ID AAO30457 standard; protein; 285 AA.

AC AAO30457;

XX 22-SEP-2003 (first entry)

DE hIL5-P30-P2-hIL5 (hIL5.34) fusion construct protein.

KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;

KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;

KW IL5; epitope; human; tetanus toxoid; chimeric.

OS Homo sapiens.

OS Unidentified.

OS Chimeric.

FH Key Location/Qualifiers

FT Peptide 1..19

FT Protein /note= "Human IL5 leader peptide"

FT Protein 20..285

FT Protein /note= "Mature hIL5.34 protein"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 XX WPI; 2003-449558/42.
 DR N-PSDB; AAL61293.
 XX
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 FT
 XX
 PS Claim 20; Page 109-110; 196pp; English.
 XX
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention
 XX
 XX Sequence 285 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 135 FNNFTVSFWLRVPKVSASHLE 155
 RESULT 147
 AAO30458
 ID AAO30458 standard; protein; 285 AA.
 XX
 AC AAO30458;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5-P2-P30-hIL5 (hIL5.35) fusion construct protein.
 XX
 XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.35 protein"
 FT Region 24..44
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P2 epitope"
 XX
 PN WO2003042244-A2.
 XX
 PD 22-MAY-2003.
 XX
 PF 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 XX WPI; 2003-449558/42.
 DR N-PSDB; AAL61294.
 XX
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 FT
 XX
 PS Claim 20; Page 112-113; 196pp; English.
 XX
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention
 XX
 XX Sequence 285 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 150 FNNFTVSFWLRVPKVSASHLE 170
 RESULT 148
 AAO30459
 ID AAO30459 standard; protein; 287 AA.
 XX
 AC AAO30459;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5.36 variant protein.
 XX
 XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.36 protein"
 FT Region 24..44
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P2 epitope"
 XX
 PN WO2003042244-A2.
 XX
 PD 22-MAY-2003.
 XX
 PF 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61295.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 20; Page 115-117; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 287 AA;
 Query Match 100.0%; Score 112; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 24 FNNFTVSFWLRVPKVSASHLE 44
 RESULT 149
 AAO30460
 ID AAO30460 standard; protein; 287 AA.
 AC AAO30460;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5.37 variant protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.37 protein"
 FT Region 24..38
 FT /note= "Tetanus toxoid P2 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P30 epitope"
 XX
 XX WO2003042244-A2.
 XX
 XX 22-MAY-2003.
 XX
 XX 15-NOV-2002; 2002WO-DK000764.
 XX
 XX 16-NOV-2001; 2001DK-00001702.
 XX
 XX 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61296.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 20; Page 117-120; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 287 AA;
 Query Match 100.0%; Score 112; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 267 FNNFTVSFWLRVPKVSASHLE 287
 RESULT 150
 ADL64008
 ID ADL64008 standard; protein; 385 AA.
 XX
 AC ADL64008;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNML13p30FC.
 XX
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 XX Mus sp.
 OS Clostridium tetani.
 OS Cytomegalovirus.
 OS Synthetic.
 OS Unidentified.
 XX
 XX Key Location/Qualifiers
 FT Misc-difference 235..239
 FT /note= "Encoded for by AACCGT"
 XX
 XX WO2004019974-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003703.
 XX
 XX 30-AUG-2002; 2002GB-00020212.

PR 28-FEB-2003; 2003GB-00004672.
 PA (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 XX
 XX
 PI Ashman C, Ellis JH;
 XX
 XX WPI; 2004-239121/22.
 DR N-PSDB; ADL63996.
 XX
 XX
 PT New immunogenic composition comprising an interleukin-13 (IL-13) element
 PT that drives an immune response recognizing human IL-13 and foreign T-cell
 PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 XX
 XX
 PS Disclosure; Fig 18; 89pp; English.
 XX
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNmlil3p30FC expression plasmid protein sequence of the chimeric
 CC murine IL-13 protein and the tetani p30 peptide under the control of a
 CC CMV promoter of the invention. NOTE: This sequence is given in the figure
 CC but is not further referred to in the specification.
 XX
 XX SQ Sequence 385 AA;
 Query Match 100.0%; Score 112; DB 8; Length 385;
 Best Local Similarity 100.0%; Pred. No. 2.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 97 FNNFTVSFWLRVPKVSASHLE 117
 RESULT 151
 ADL63969
 ID ADL63969 standard; protein; 385 AA.
 XX
 XX ADL63969;
 AC
 XX
 XX 03-JUN-2004 (first entry)
 DT
 XX
 XX Protein encoded by the expression plasmid pCDNmlil3p30FC.
 DE
 XX mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 XX Mus sp.
 OS Clostridium tetani.
 OS Cytomegalovirus.
 OS Synthetic.
 OS Unidentified.
 XX
 XX Key Location/Qualifiers
 FH Misc-difference 235..239
 FT

PT /note= "Encoded for by AACCGT"
 XX
 XX W02004019975-A2.
 XX
 PD 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003729.
 XX
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 PA
 XX Ellis JH, Ashman C;
 PI
 XX WPI; 2004-239122/22.
 DR N-PSDB; ADL63920.
 DR
 XX New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; Fig 18; 89pp; English.
 PS
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNmlil3p30FC expression plasmid protein sequence of the chimeric
 CC murine IL-13 protein and the tetani p30 peptide under the control of a
 CC CMV promoter of the invention. NOTE: This sequence is given in the figure
 CC but is not further referred to in the specification.
 XX
 XX SQ Sequence 385 AA;
 Query Match 100.0%; Score 112; DB 8; Length 385;
 Best Local Similarity 100.0%; Pred. No. 2.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 97 FNNFTVSFWLRVPKVSASHLE 117
 RESULT 152
 AAY49255
 ID AAY49255 standard; protein; 390 AA.
 XX
 XX AAY49255;
 AC
 XX
 XX 07-FEB-2000 (first entry)
 DT
 XX
 XX N19 polypeptide carrier protein construct amino acid sequence.
 DE
 XX Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 KW encapsulated bacteria.
 KW
 XX Synthetic.
 OS
 XX W09955730-A2.
 XX
 XX

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PD XX 04-NOV-1999.
XX PF
XX PR 27-APR-1999; 99WO-IB000844.
XX PR 27-APR-1998; 98GB-00008932.
XX PR (CHIR-) CHIRON SPA.
XX PA
XX PI Rappuoli R, Grandi G;
XX DR WPI; 2000-023325/02.
XX DR N-PSDB; AAZ31417.
XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
XX PT diseases caused by encapsulated bacteria.
XX PS Disclosure; Fig 8; 76pp; English.
XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
XX CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
XX CC carrier protein can be prepared by expressing a vector comprising a
XX CC nucleic acid molecule encoding the protein, in a host cell and recovering
XX CC the expressed protein. The carrier protein can also be produced by (a)
XX CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
XX CC annealing the oligonucleotides to form duplexes; (c) introducing the
XX CC duplexes into an expression vector; (d) introducing the expression vector
XX CC into a host cell; and (e) isolating the fusion protein produced from a
XX CC culture of the host cells. The carrier protein can be used as a
XX CC protective immunogen in the control of diseases caused by encapsulated
XX CC bacteria. The present sequence represents the amino acid sequence of N19
XX CC polypeptide carrier protein construct
XX SQ Sequence 390 AA;

Query Match 100.0%; Score 112; DB 3; Length 390;
Best Local Similarity 100.0%; Pred. No. 2.2e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db |||||
103 FNNFTVSFWLRVPKVSASHLE 123

RESULT 153
ADL64009
ID ADL64009 standard; protein; 394 AA.
XX AC
XX ADL64009;
XX DT 03-JUN-2004 (first entry)
XX DE Protein encoded by the expression plasmid pCDNMIL13p30.
XX KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX KW murine; peptide p30.
XX XX
XX OS Mus sp.
XX OS Clostridium tetani.
XX OS Cytomegalovirus.
XX OS Synthetic.
XX OS Unidentified.
XX XX
XX FH Key Location/Qualifiers
XX FT Misc-difference 158 /note= "Encoded by CCC"
XX FT
XX PN WO2004019974-A2.
XX PD 11-MAR-2004.

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XX XX 28-AUG-2003; 2003WO-GB003703.
XX PF
XX PR 30-AUG-2002; 2002GB-00020212.
XX PR 28-FEB-2003; 2003GB-00004672.
XX XX (GLAX ) GLAXO GROUP LTD.
XX PA (ASHM/) ASHMAN C.
XX XX
XX PI Ashman C, Ellis JH;
XX XX WPI; 2004-239121/22.
XX DR N-PSDB; ADL63997.
XX XX
XX PT New immunogenic composition comprising an interleukin-13 (IL-13) element
XX PT that drives an immune response recognizing human IL-13 and foreign T-cell
XX PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX XX
XX PS Disclosure; Fig 19; 89pp; English.
XX CC This invention relates to a novel immunogenic composition comprising an
XX CC IL-13 (interleukin-13) element that is capable of driving an immune
XX CC response by recognising human IL-13 and one or more foreign T-cell
XX CC epitopes. Specifically, it refers to a method for producing a human
XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX CC a human vaccine. The present invention describes human chimeric IL-13
XX CC sequences as having a similar conformational shape to native human IL-13
XX CC while having sufficient amino acid sequence diversity, attributable to
XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX CC the method results in a reduction in airway hyper-responsiveness (AHR),
XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX CC the airways and skin irritation, as well as reducing the requirement for
XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX CC dermatological and antiasthmatic activities, can be used via gene therapy
XX CC to treat individuals suffering from or susceptible to chronic obstructive
XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
XX CC is the pCDNMIL13p30 expression plasmid protein sequence of the chimeric
XX CC murine IL-13 protein and the tetani p30 peptide under the control of a
XX CC CMV promoter of the invention. NOTE: This sequence is given in the figure
XX CC but is not further referred to in the specification.
XX XX
XX SQ Sequence 394 AA;

Query Match 100.0%; Score 112; DB 8; Length 394;
Best Local Similarity 100.0%; Pred. No. 2.2e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db |||||
21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 154
ADL64010
ID ADL64010 standard; protein; 394 AA.
XX XX
XX AC ADL64010;
XX XX
XX DT 03-JUN-2004 (first entry)
XX XX
XX DE Protein encoded by the expression plasmid pCDNMIL13p30newFC.
XX KW immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
XX KW AHR; mucus hyper-secretion; goblet cell metaplasia;
XX KW sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
XX KW dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis.
XX XX
XX OS Synthetic.
XX OS Unidentified.
XX XX
XX PN WO2004019974-A2.
XX PD

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PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003703.
 PF 30-AUG-2002; 2002GB-00020212.
 PR 28-FEB-2003; 2003GB-00004672.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 PI Ashman C, Ellis JH;
 XX WPI; 2004-239121/22.
 DR N-PSDB; ADL63999.
 DR N-PSDB; ADL63999.
 XX
 PT New immunogenic composition comprising an interleukin-13 (IL-13) element
 PT that drives an immune response recognizing human IL-13 and foreign T-cell
 PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 XX
 PS Disclosure; Fig 20; 89pp; English.
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNcIL13p30newFC expression plasmid protein sequence of the
 CC invention. NOTE: This sequence is given in the figure but is not further
 CC referred to in the specification.
 XX
 SQ Sequence 394 AA;
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 155
 ADL63971
 ID ADL63971 standard; protein; 394 AA.
 XX
 AC ADL63971;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNcIL13p30newFC.
 XX
 KW immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
 KW AHR; mucus hyper-secretion; goblet cell metaplasia;
 KW sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
 KW dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis.
 XX
 XX Synthetic.
 OS Unidentified.
 OS
 XX W02004019975-A2.
 FN
 XX

PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA
 XX Ellis JH, Ashman C;
 PI WPI; 2004-239122/22.
 XX N-PSDB; ADL63923.
 DR
 DR
 XX
 PT New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against Interleukin-13.
 XX
 PS Disclosure; Fig 20; 89pp; English.
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNcIL13p30newFC expression plasmid protein sequence of the
 CC invention. NOTE: This sequence is given in the figure but is not further
 CC referred to in the specification.
 XX
 SQ Sequence 394 AA;
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 156
 ADL63970
 ID ADL63970 standard; protein; 394 AA.
 XX
 AC ADL63970;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNcIL13p30.
 XX
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 XX Mus sp.
 OS Clostridium tetani.
 OS Cytomegalovirus.
 OS Synthetic.
 OS Unidentified.

XX Key Location/Qualifiers
 FH Misc-difference 158
 FT /note= "Encoded by CCC"
 XX
 XX WO2004019975-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003729.
 XX
 XX 30-AUG-2002; 2002GB-00020211.
 XX
 XX 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 XX
 XX Ellis JH, Ashman C;
 XX
 XX WPI; 2004-239122/22.
 XX
 XX N-PSDB; ADL63921.
 XX
 XX New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; Fig 19; 89pp; English.
 XX
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNmiLi3p30 expression plasmid protein sequence of the chimeric
 CC murine IL-13 protein and the tetani p30 peptide under the control of a
 CC CMV promoter of the invention. NOTE: This sequence is given in the figure
 CC but is not further referred to in the specification.
 XX
 XX Sequence 394 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 157
 AAR12471
 ID AAR12471 standard; protein; 452 AA.
 XX
 XX AAR12471;
 XX
 XX 25-MAR-2003 (revised)
 DT 05-AUG-1991 (first entry)
 XX
 XX Tetanus toxin fragment C encoded by gene with increased G+C content.
 DE Terminator; vaccine.
 KW
 XX Synthetic.
 OS

XX EP430645-A.
 XX
 XX 05-JUN-1991.
 XX
 XX 27-NOV-1990; 90EP-00312870.
 XX
 XX 28-NOV-1989; 89GB-00026832.
 PR 17-MAR-1990; 90GB-00006097.
 XX
 XX (WELL) WELLCOME FOUND LTD.
 XX
 XX Makoff AJ, Romanos MA, Clare JJ, Fairweather NF;
 PI
 XX WPI; 1991-166115/23.
 DR N-PSDB; AAQ12121.
 XX
 XX DNA sequence encoding tetanus toxin fragment C - useful in the
 PT manufacture of vaccines for immunity to tetanus utilising yeast as host
 PT organism.
 XX
 XX Disclosure; Fig 2; 50pp; English.
 PS
 XX The (G+C) content of the synthetic gene is increased by 47% wrt the
 CC native sequence. This eliminates six "terminator" regions which were
 CC found to be present in (A+T) rich regions. The terminators
 CC (termination/endo-nucleolytic processing/polyadenylation sites) were
 CC previously responsible for incomplete transcription of the mRNA. The
 CC elimination of these elements (using codon degeneracy) provided for
 CC successful expression in yeast of the tetanus toxin fragment C. (Updated
 CC on 25-MAR-2003 to correct PA field.)
 XX
 XX Sequence 452 AA;
 SQ
 Query Match 100.0%; Score 112; DB 2; Length 452;
 Best Local Similarity 100.0%; Pred. No. 2.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 84 FNNFTVSFWLRVPKVSASHLE 104
 RESULT 158
 AAB31427
 ID AAB31427 standard; protein; 453 AA.
 XX
 XX AAB31427;
 AC
 XX 20-APR-2001 (first entry)
 DT
 XX Amino acid sequence of tetanus toxin fragment C.
 DE
 XX Vaccine; shed antigen-specific B cell; idiotypic antibody;
 KW immune complex-mediated disease; autoimmune disease; tetanus protein;
 KW humoral immune response; cancer.
 XX
 XX Clostridium tetani.
 OS
 XX WO200076319-A1.
 PN
 XX 21-DEC-2000.
 PD
 XX 16-JUN-2000; 2000WO-US016677.
 PF
 XX 16-JUN-1999; 99US-0139521P.
 PR 15-JUN-2000; 2000US-00594985.
 PR
 XX (BIOC-) BIOCRYSTAL LTD.
 XX
 XX Nelson MB, Barbera-Guillem E;
 PI
 XX WPI; 2001-080635/09.
 DR

XX Inducing an immune response against shed antigen-specific B cell
 PT idiotypes, by administering a vaccine formulation comprising
 PT polynucleotides encoding an idiotype determinant or peptides comprising
 PT an idiotype determinant.

XX Example 2; Page 72-73; 81pp; English.

XX The present sequence represents a fragment of tetanus protein, which is
 CC used as an immunostimulatory protein in vaccines of the invention. The
 CC specification describes a method for inducing an immune response reactive
 CC with idiotypes present on shed antigen-specific B cells (SAB) of an
 CC individual. The method involves administering a vaccine formulation
 CC comprising polynucleotide encoding an idiotype of an antibody that binds
 CC to an epitope of shed antigen. The method is useful for inducing an
 CC immune response reactive with idiotypes present on SAB of an individual.
 CC The method is useful for depleting shed antigen-specific B cells, and for
 CC treating immune complex-mediated disease progression in organ specific
 CC autoimmune disease exacerbated by humoral immune response against groups
 CC expressed on shed antigen, or by plasma cell production of antibodies
 CC against groups of shed antigen. It is useful in cancer therapy and for
 CC treating autoimmune disease

XX Sequence 453 AA;

Query Match 100.0%; Score 112; DB 4; Length 453;
 Best Local Similarity 100.0%; Pred. No. 2.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21
 Db 85 FNNFTVSFWLRVPRKVSASHLE 105
 |||||

RESULT 159

AY00921
 ID AAY00921 standard; protein; 463 AA.

XX AC AAY00921;

XX 28-MAY-1999 (first entry)

XX Tetanus toxin fragment C protein sequence.

XX Tetanus toxin fragment C; TTC; central nervous system; CNS; spinal cord;
 KW proteolytic fragment; retrograde axonal transport; spinal cord disease;
 KW transsynaptic transport; neurodegenerative disease; motoneuron disease;
 KW amyotrophic lateral sclerosis; spinal muscular atrophy; therapy; ALS;
 KW SMA; neurodegenerative lysosomal storage disease; neuronal mapping.

XX Clostridium tetani.

XX WO9909057-A2.

XX 25-FEB-1999.

XX 12-AUG-1998; 98WO-EP005113.

XX 14-AUG-1997; 97US-0055615P.

XX 13-NOV-1997; 97US-0065236P.

XX (INSP) INST PASTEUR.

XX Coen L, Osta Pinzolas R, Brulet P;

XX WPI; 1999-180971/15.

XX N-ESDB; AAX27234.

XX Delivery of a composition to the central nervous system or spinal cord -
 PT comprises administration of a non-toxic, proteolytic fragment of tetanus
 PT toxin in association with a molecule having biological function.

XX Example 1; Fig 1; 53pp; English.

XX This sequence represents the tetanus toxin fragment C (TTC). The
 CC invention relates to a method for in vivo delivery of a desired
 CC composition into a human or animal central nervous system (CNS) or spinal
 CC cord comprising administering a non-toxic, proteolytic fragment of tetanus
 CC toxin (TT) in association with at least a molecule having a biological
 CC function and where the composition is capable of in vivo retrograde
 CC axonal transport and transsynaptic transport into the CNS or the spinal
 CC cord of the human or animal and of being delivered to different areas of
 CC the CNS or the spinal cord. The method can be used for the treatment of
 CC humans or animals with CNS or spinal cord disease, e.g. neurodegenerative
 CC and motoneuron diseases such as amyotrophic lateral sclerosis (ALS),
 CC spinal muscular atrophies (SMA) or neurodegenerative lysosomal storage
 CC diseases. Compositions comprising hybrid fragments of TT comprising
 CC fragments C and B can also be used for neuronal mapping and
 CC immunisations. Use of TT comprising fragments A, B and C results in
 CC better transport of the fragment inside the organism compared with
 CC fragment C

XX Sequence 463 AA;

Query Match 100.0%; Score 112; DB 2; Length 463;
 Best Local Similarity 100.0%; Pred. No. 2.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21
 Db 95 FNNFTVSFWLRVPRKVSASHLE 115
 |||||

RESULT 160

AAO30491

ID AAO30491 standard; protein; 514 AA.

XX AC AAO30491;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant (TNF_T2) protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.

XX Homo sapiens.

XX Unidentified.

XX Chimeric.

Key	Location/Qualifiers
FT Region	2..158
FT	/note= "Human TNF"
FT Region	159..161
FT	/note= "Tri-glycine linker"
FT Region	162..182
FT	/note= "Tetanus toxoid P30 epitope"
FT Region	183..339
FT	/note= "Human TNF"
FT Region	340..342
FT	/note= "Tri-glycine linker"
FT Region	343..357
FT	/note= "Tetanus toxoid P2 epitope"
FT Region	358..514
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61301.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 23; Page 169-171; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 CC epitopes. This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 514 AA;
 Query Match 100.0%; Score 112; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 162 FNNFTVSFWLRVPKVSASHLE 182
 RESULT 161
 AAO30490
 ID AAO30490 standard; protein; 514 AA.
 AC AAO30490;
 XX
 DT 22-SEP-2003 (first entry)
 DE Human TNFalpha variant (TNF_T1) protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 2..158
 FT /note= "Human TNF"
 FT Region 159..161
 FT /note= "Tri-glycine linker"
 FT Region 162..176
 FT /note= "Tetanus toxoid P2 epitope"
 FT Region 177..333
 FT /note= "Human TNF"
 FT Region 334..336
 FT /note= "Tri-glycine linker"
 FT Region 337..357
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 358..514
 FT /note= "Human TNF"
 XX
 PN WO2003042244-A2.
 XX

PD 22-MAY-2003.
 XX
 XX 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61300.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 23; Page 163-166; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 CC epitopes. This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 514 AA;
 Query Match 100.0%; Score 112; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 337 FNNFTVSFWLRVPKVSASHLE 357
 RESULT 162
 AAO30495
 ID AAO30495 standard; protein; 514 AA.
 AC AAO30495;
 XX
 DT 22-SEP-2003 (first entry)
 DE Human TNFalpha variant, hTNFT_4.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 2..158
 FT /note= "Human TNF"
 FT Region 159..161
 FT /note= "Tri-glycine linker"
 FT Region 162..318
 FT /note= "Human TNF"
 FT Region 319..321
 FT /note= "Tri-glycine linker"
 FT Region 322..336
 FT /note= "Tetanus toxoid P2 epitope"
 FT

```

FT Region 337. .493
FT /note= "Human TNF"
FT Region 494. .514
FT /note= "Tetanus toxoid P30 epitope"
XX
FN WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDORGB B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX N-PSDB; AAL61305.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 191-193; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein. The
XX variant comprises 3 hTNF sequences joined by glycine linkers and tetanus
XX toxoid P2 and P30 epitopes. This sequence is used to illustrate the
XX method of the invention
XX
XX SQ Sequence 514 AA;
XX
XX Query Match 100.0%; Score 112; DB 6; Length 514;
XX Best Local Similarity 100.0%; Pred. No. 3e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX ||||||||||||||||||
XX 494 FNNFTVSFWLRVPKVSASHLE 514
XX
XX RESULT 163
XX AAO30492
XX ID AAO30492 standard; protein; 517 AA.
XX
XX AC AAO30492;
XX
XX DT 22-SEP-2003 (first entry)
XX
XX DE Human TNFalpha variant protein #1.
XX
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX variant; tetanus toxoid; epitope; mutein.
XX
XX OS Homo sapiens.
XX OS Unidentified.
XX OS Chimeric.
XX
XX FH Key Location/Qualifiers
XX Region 2. .158
XX /note= "Human TNF"

```

```

FT Region 159. .161
FT /note= "Tri-glycine linker"
FT Region 162. .318
FT /note= "Human TNF"
FT Region 319. .321
FT /note= "Tri-glycine linker"
FT Region 322. .336
FT /note= "Tetanus toxoid P2 epitope"
FT Region 337. .493
FT /note= "Human TNF"
FT Region 494. .496
FT /note= "Tri-glycine linker"
FT Region 497. .517
FT /note= "Tetanus toxoid P2 epitope"
XX
XX WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDORGB B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX N-PSDB; AAL61302.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 175-177; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein with
XX 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX epitopes. This sequence is used to illustrate the method of the invention
XX
XX SQ Sequence 517 AA;
XX
XX Query Match 100.0%; Score 112; DB 6; Length 517;
XX Best Local Similarity 100.0%; Pred. No. 3e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX ||||||||||||||||||
XX 497 FNNFTVSFWLRVPKVSASHLE 517
XX
XX Db
XX
XX RESULT 164
XX ABR82481
XX ID ABR82481 standard; protein; 537 AA.
XX
XX AC ABR82481;
XX
XX DT 20-NOV-2003 (first entry)
XX
XX DE Truncated human CEA-TT P2 and P30 epitopes.
XX
XX KW CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
XX APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.

```

```

XX OS Synthetic.
XX PH Key Location/Qualifiers
XX FT Peptide 1..34
XX FT /note= "signal peptide"
XX FT 35..537
XX FT /note= "mature protein"
XX PN WO2003059379-A2.
XX XX
XX PD 24-JUL-2003.
XX XX
XX PF 17-JAN-2003; 2003WO-DK000031.
XX XX
XX PR 17-JAN-2002; 2002DK-00000082.
XX PR 17-JAN-2002; 2002US-0350047P.
XX XX
XX PA (PHAR-) PHARMEXA AS.
XX PI Klysner S, Voldborg B;
XX DR WPI; 2003-587260/55.
XX DR N-PSDB; ACF35968.
XX XX
XX PT Inducing an immune response in humans against autologous carcinoembryonic
XX PT antigen (CEA) comprises administering a modified CEA polypeptide, a
XX PT nucleic acid encoding the polypeptide, or a microorganism expressing the
XX PT polypeptide.
XX XX
XX PS Disclosure; Page 134-137; 140pp; English.
XX XX
XX CC The invention relates to inducing an immune response against autologous
XX CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
XX CC involves effecting uptake and processing by antigen presenting cells
XX CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
XX CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
XX CC or virus expressing the modified CEA polypeptide to induce a CTL response
XX CC and an antibody response that targets the autologous CEA. The method is
XX CC useful in immunizing actively against diseases characterized by cells
XX CC that express CEA. The present sequence represents a truncated human CEA
XX CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
XX CC in its sequence
XX SQ Sequence 537 AA;

Query Match 100.0%; Score 112; DB 7; Length 537;
Best Local Similarity 100.0%; Pred. No. 3.1e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 513 FNNFTVSFWLRVPKVSASHLE 533

RESULT 165
AAP70345
ID AAP70345 standard; protein; 573 AA.
XX AC
XX AC AAP70345;
XX XX
XX DT 25-MAR-2003 (revised)
XX DT 22-APR-1991 (first entry)
XX XX
XX DE Portion of B fragment and all of the C fragment of tetanus toxin.
XX XX
XX KW TT; vaccine.
XX XX
XX OS Clostridium tetani.
XX XX
XX PN EP209281-A.
XX XX
XX PD 21-JAN-1987.

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XX PF 27-JUN-1986; 86EP-00305029.
XX PR 28-JUN-1985; 85GB-00016442.
XX PA (WELL ) WELLCOME FOUND LTD.
XX PI Fairweathe NF;
XX XX
XX DR WPI; 1987-015999/03.
XX DR N-PSDB; AAN70545.
XX XX
XX PT Cloned DNA sequence coding for tetanus toxin - or its fragments contg.
XX PT epitope used to express antigens for vaccine prodn.
XX XX
XX PS Claim 4; Fig 1; 36pp; English.
XX XX
XX CC Gene product comprises a tetanus toxin fragment, which may be expressed
XX CC in a transformed host, and used as an antigen in vaccine production,
XX CC against the disease. (Updated on 25-MAR-2003 to correct PA field.)
XX XX
XX SQ Sequence 573 AA;

Query Match 100.0%; Score 112; DB 1; Length 573;
Best Local Similarity 100.0%; Pred. No. 3.4e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 205 FNNFTVSFWLRVPKVSASHLE 225

RESULT 166
AAE07897
ID AAE07897 standard; protein; 605 AA.
XX AC
XX AC AAE07897;
XX DT 11-SEP-2003 (revised)
XX DT 01-NOV-2001 (first entry)
XX XX
XX DE Modified clostridial heavy chain fragment #4.
XX XX
XX KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
XX KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
XX KW diphtheria neurotoxin; tetanus neurotoxin; TeNT.
XX OS Corynebacterium diphtheriae.
XX OS Clostridium tetani.
XX OS Chimeric.
XX PN WO200158936-A2.
XX PD 16-AUG-2001.
XX XX
XX PF 04-DEC-2000; 2000WO-CB004644.
XX XX
XX PR 02-DEC-1999; 99GB-00028530.
XX PR 07-APR-2000; 2000GB-00008658.
XX XX
XX PA (MICK-) MICROBIOLOGICAL RES AUTHORITY.
XX XX
XX PI Shone CC, Sutton JM, Silman N;
XX XX
XX DR WPI; 2001-514643/56.
XX XX
XX PT New non toxic polypeptide for delivery of a therapeutic agent for the
XX PT treatment of a CNS disorder comprising a binding domain that translocates
XX PT the therapeutic agent into the neuronal cells.
XX PS Example 2; Page 45; 50pp; English.
XX XX
XX CC The invention relates to a non toxic polypeptide, for delivery of a

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therapeutic agent to a neuronal cell, which comprises a binding domain (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as Hc) that binds to the neuronal cell and a translocation domain (amino terminal half of HC, designated as HN), that translocates the therapeutic agent into the neuronal cell, where the translocation domain is not a HN domain of a clostridial neurotoxin and is not a fragment or derivative of a HN domain of a clostridial toxin. Polypeptides of the invention are useful for the treatment of a disease state associated with neuronal cells. The polypeptide constructs are useful for delivering therapeutic substances to neuronal cells. They are useful to treat disorders of the CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours and infection. They are also useful in gene therapy. The present sequence is modified clostridial heavy chain fragment. This sequence is constructed by fusing the truncated binding domain of tetanus neurotoxin (TENT) with translocation domain of diphtheria neurotoxin. (Updated on 11 -SEP-2003 to standardise OS field)

XX SQ Sequence 605 AA;

Query Match 100.0%; Score 112; DB 4; Length 605;
Best Local Similarity 100.0%; Pred. No. 3.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
Db 235 FNNFTVSFWLRVVKVSASHLE 255

RESULT 167

AAW48909
ID AAW48909 standard; protein; 618 AA.

XX AC AAW48909;

DT 17-OCT-2003 (revised)
DT 23-SEP-1998 (first entry)

XX DE SOD-1/TTC hybrid protein.

XX Chimeric; copper-zinc superoxide dismutase; SOD-1; TTC; SOD-Tet451;
KW tetanus toxin fragment C; tetanus holotoxin; nerve cell; stroke;
KW neurological disorder; oxidative stress; brain hypoxia-reperfusion;
KW epilepsy; Parkinson's disease; Huntington's disease.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX FH Key Location/Qualifiers
FT Region 1..163
FT /note= "SOD-1"
FT Region 168..618
FT /note= "TTC moiety"

XX US5780024-A.

XX 14-JUL-1998.

XX 21-JUN-1996; 96US-00668381.

XX 23-JUN-1995; 95US-0000473P.

XX (GSHO) GEN HOSPITAL CORP.

XX (UTMA-) UNIV MARYLAND BALTIMORE.

XX Brown RH, Francis JW, Fishman PS, Hosler BA;

XX WPI; 1998-412999/35.

XX N-PSDB; AAV32580.

XX New hybrid protein of superoxide dismutase and tetanus toxin fragment C -
FT having increased uptake by neurons and retention of enzymatic activity in
PT these cells, for treating neurological diseases associated with oxidative

PT stress.

XX Claim 7; Col 23-26; 23pp; English.

XX The present sequence represents an enzymatically active human copper-zinc
CC superoxide dismutase (SOD-1) fused at its carboxyl terminus with the
CC tetanus toxin fragment C (TTC) moiety. The TTC moiety constitutes amino
CC acid residues 865-1315 of the tetanus holotoxin. The hybrid protein,
CC referred as SOD-Tet451, is claimed to have the following properties: (a)
CC it exhibits Cu/Zn SOD enzymatic activity; (b) the TTC moiety selectively
CC binds to nerve cells and allows uptake of the hybrid protein into these
CC cells; and (c) it retains substantial SOD enzymatic activity following
CC cellular uptake. SOD-Tet451 is claimed to be useful for treating
CC neurological disorders associated with oxidative stress, e.g. stroke,
CC brain hypoxia-reperfusion, epilepsy, Parkinson's and Huntington's
CC diseases. (Updated on 17-OCT-2003 to standardise OS field)

XX SQ Sequence 618 AA;

Query Match 100.0%; Score 112; DB 2; Length 618;
Best Local Similarity 100.0%; Pred. No. 3.7e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
Db 250 FNNFTVSFWLRVVKVSASHLE 270

RESULT 168

AAAB31429
ID AAB31429 standard; protein; 661 AA.

XX AC AAB31429;

DT 26-APR-2001 (first entry)

XX DE Shed antigen-specific B cell antigen linked to tetanus toxin fragment C.
XX Vaccine; shed antigen-specific B cell; idiotypic antibody;
KW immune complex-mediated disease; autoimmune disease; tetanus protein;
KW humoral immune response; cancer.

XX OS Synthetic.

OS Clostridium tetani.

XX WO200076319-A1.

XX 21-DEC-2000.

XX 16-JUN-2000; 2000WO-US016677.

XX 16-JUN-1999; 99US-0139521P.

XX 15-JUN-2000; 2000US-00594985.

XX (BIOC-) BIOCRYSTAL LTD.

XX Nelson MB, Barbera-Guillem E;

XX WPI; 2001-080635/09.

XX Inducing an immune response against shed antigen-specific B cell
FT idiotypes, by administering a vaccine formulation comprising
PT polynucleotides encoding an idiotype determinant or peptides comprising
FT an idiotype determinant.

XX Example 2; Page 73-76; 81pp; English.

XX The present sequence represents a fusion protein, comprising a protein
CC used for immunising against shed antigen-specific B cells linked to a
CC fragment of tetanus protein. It is used in vaccines of the invention. The
CC specification describes a method for inducing an immune response reactive
CC with idiotypes present on shed antigen-specific B cells (SAB) of an
CC individual. The method involves administering a vaccine formulation

CC comprising polynucleotide encoding an idiotype of an antibody that binds
 CC to an epitope of shed antigen. The method is useful for inducing an
 CC immune response reactive with idiotypes present on 8B of an individual.
 CC The method is useful for depleting shed antigen-specific B cells, and for
 CC treating immune complex-mediated disease progression in organ specific
 CC autoimmune disease exacerbated by humoral immune response against groups
 CC expressed on shed antigen, or by plasma cell production of antibodies
 CC against groups of shed antigen. It is useful in cancer therapy and for
 CC treating autoimmune disease

XX SQ Sequence 661 AA;

Query Match 100.0%; Score 112; DB 4; Length 661;
 Best Local Similarity 100.0%; Pred. No. 4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 293 FNNFTVSFWLRVPKVSASHLE 313

RESULT 169

AAE07895
 ID AAE07895 standard; protein; 665 AA.

XX AC AAE07895;

DT 11-SEP-2003 (revised)

DT 01-NOV-2001 (first entry)

DE Modified clostridial heavy chain fragment #2.

KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
 KW diphtheria neurotoxin; tetanus neurotoxin; TeNT.

XX OS Corynebacterium diphtheriae.

OS Clostridium tetani.

OS Chimeric.

XX PN W0200158936-A2.

XX PD 16-AUG-2001.

XX PF 04-DEC-2000; 2000WO-GB004644.

XX PR 02-DEC-1999; 99GB-00028530.

XX PR 07-APR-2000; 2000GB-00008658.

XX PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX PI Shone CC, Sutton JM, Silman N;

XX DR WPI; 2001-514643/56.

XX New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.

XX PS Example 2; Page 44; 50pp; English.

XX The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC HC) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours

CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain fragment. This sequence is
 CC constructed by fusing the binding domain of tetanus neurotoxin (TeNT)
 CC with translocation domain of diphtheria neurotoxin. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 665 AA;

Query Match 100.0%; Score 112; DB 4; Length 665;
 Best Local Similarity 100.0%; Pred. No. 4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 295 FNNFTVSFWLRVPKVSASHLE 315

RESULT 170

AAE35689

ID AAE35689 standard; protein; 665 AA.

XX AC AAE35689;

XX DT 23-OCT-2003 (revised)

DT 17-JUN-2003 (first entry)

XX DE DiPT HN domain-TeNT-Hc fusion construct.

XX KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 KW binding domain.

XX OS Corynebacterium diphtheriae.

OS Clostridium tetani.

OS Chimeric.

XX PN W0200296467-A2.

XX PD 05-DEC-2002.

XX PF 21-MAY-2002; 2002WO-GB002384.

XX PR 24-MAY-2001; 2001GB-00012687.

XX PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX PI Sutton JM, Shone CC;

XX DR WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.

XX PS Example 12; Page 49-52; 130pp; English.

XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells, apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and

CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising *Corynebacterium diphtheriae* diphtheria toxin translocation
 CC domain (Dip-HN domain) and *Clostridium tetani* tetanus neurotoxin binding
 CC domain (TeNT-Hc). This sequence is used in the exemplification of the
 CC invention. (Updated on 23-OCT-2003 to standardise OS field)
 XX
 SQ Sequence 665 AA;

Query Match 100.0%; Score 112; DB 6; Length 665;
 Best Local Similarity 100.0%; Pred. No. 4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 295 FNNFTVSFWLRVPKVSASHLE 315

RESULT 171
 AAE35690
 ID AAE35690 standard; protein; 677 AA.

AC AAE35690;

DT 17-JUN-2003 (first entry)

DE TeNT-Hc-DipT HN domain-thrombin linker fusion construct.

KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain.

XX *Corynebacterium diphtheriae*.

OS *Clostridium tetani*.

OS Unidentified.

OS Chimeric.

XX WO200296467-A2.

XX 05-DEC-2002.

XX 21-MAY-2002; 2002WO-GB002384.

XX 24-MAY-2001; 2001GB-00012687.

XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX Sutton JM, Shone CC;

XX WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.

XX Example 12; Page 52-54; 130pp; English.

XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders

CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising *Corynebacterium diphtheriae* diphtheria toxin translocation
 CC domain (Dip-HN domain) and *Clostridium tetani* tetanus neurotoxin binding
 CC domain (TeNT-Hc) and thrombin linker peptide. This sequence is used in
 CC the exemplification of the invention
 XX
 SQ Sequence 677 AA;

Query Match 100.0%; Score 112; DB 6; Length 677;
 Best Local Similarity 100.0%; Pred. No. 4.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 307 FNNFTVSFWLRVPKVSASHLE 327

RESULT 172

AAE35691

ID AAE35691 standard; protein; 677 AA.

AC AAE35691;

DT 17-JUN-2003 (first entry)

DE TeNT-Hc-DipT HN domain-factor Xa linker fusion construct.

KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain.

XX *Corynebacterium diphtheriae*.

OS *Clostridium tetani*.

OS Unidentified.

OS Chimeric.

XX WO200296467-A2.

XX 05-DEC-2002.

XX 21-MAY-2002; 2002WO-GB002384.

XX 24-MAY-2001; 2001GB-00012687.

XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX Sutton JM, Shone CC;

XX WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.

XX Example 12; Page 55-57; 130pp; English.

XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for

CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DipT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc) and factor Xa linker peptide. This sequence is used in
 CC the exemplification of the invention
 XX
 XX Sequence 677 AA;

Query Match 100.0%; Score 112; DB 6; Length 677;
 Best Local Similarity 100.0%; Pred. No. 4.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 307 FNNFTVSFWLRVPKVSASHLE 327
 |||||

RESULT 173

RAY92647

ID AAY92647 standard; protein; 693 AA.

XX

AC AAY92647;

XX

XX 10-AUG-2000 (first entry)

XX

XX Mutant human PSM antigen splice variant construct, hPSM'6.3.

XX

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX

Key Location/Qualifiers

153..173

Peptide /label= P30

FT /note= "foreign epitope"

FT 391..405

Peptide /label= P2

FT /note= "foreign epitope"

FT

XX WO200020027-A2.

XX

XX 13-APR-2000.

XX

XX 05-OCT-1999; 99WO-DK000525.

XX

XX 05-OCT-1998; 98DK-00001261.

XX

XX 20-OCT-1998; 98US-0105011P.

XX

XX (MEBI-) M & E BIOTECH AS.

XX

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.

XX

XX Example 1; Page; 220pp; English.

XX

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 693 AA;

Query Match 100.0%; Score 112; DB 3; Length 693;

Best Local Similarity 100.0%; Pred. No. 4.2e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 153 FNNFTVSFWLRVPKVSASHLE 173

|||||

RESULT 174

AAY92648

ID AAY92648 standard; protein; 693 AA.

XX

AC AAY92648;

XX

XX 10-AUG-2000 (first entry)

XX

XX Mutant human PSM antigen splice variant construct, hPSM'8.3.

XX

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX

Key Location/Qualifiers

153..173

Peptide /label= P30

FT /note= "foreign epitope"

FT 549..563

Peptide /label= P2

FT /note= "foreign epitope"

FT

XX WO200020027-A2.

XX

XX 13-APR-2000.

XX

XX 05-OCT-1999; 99WO-DK000525.

XX

XX 05-OCT-1998; 98DK-00001261.

XX

XX 20-OCT-1998; 98US-0105011P.

XX

XX (MEBI-) M & E BIOTECH AS.

XX

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.

XX

XX Example 1; Page; 220pp; English.

XX

CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 112; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. No. 4.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 153 FNNFTVSFWLRVPKVSASHLE 173

RESULT 175

AA92661
 ID AAY92661 standard; protein; 698 AA.

AC AAY92661;

DT 10-AUG-2000 (first entry)

DE Mutant murine PSM splice variant construct, mPSM'X.

KW Prostate specific membrane antigen; splice variant; mutant; vaccination;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.

OS Mus musculus.
 OS Synthetic.

FH Key Location/Qualifiers
 FT Peptide 197..217
 FT /label= P30

PN WO200020027-A2.

PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.
 XX
 CC AAY92659-62 are mutant immunogenized murine prostate specific membrane
 CC antigen (PSM) constructs, which contain a foreign epitope, P30. The
 CC analogues can be used to study whether autotolerance to mouse PSM can be
 CC broken in mice by immunisation and/or DNA vaccination against murine PSM
 CC using murine PSM analogues. Immunogenic analogues of PSM can be used in
 CC the claimed method as an autovaccine to induce a CTL response. The method
 CC is used for inducing immune responses against weakly immunogenic cell-
 CC associated peptide antigens (PA) such as those associated with cancers
 CC (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
 CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
 CC presentation by antigen producing cells (APCs) of the animals immune
 CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 CC the PA and/or at least 1 B-cell group derived from the cell-associated PA
 CC ; and (2) at least 1 first T helper cell group which is foreign to the
 CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 CC comprising a substantial part of all known and predicted CTL and B-cell
 CC epitopes of the respective PA and including at least one foreign T helper
 CC epitope are also claimed. The method is used to treat prostate,
 CC prostate/breast or breast cancer when the PA is human PSM, FGF8b and
 CC Her2, respectively. Note: This sequence was constructed from the murine
 CC PSM splice variant (AAY92624), which appears on pages 210-213 of the
 CC specification

XX SQ Sequence 698 AA;

Query Match 100.0%; Score 112; DB 3; Length 698;
 Best Local Similarity 100.0%; Pred. No. 4.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 197 FNNFTVSFWLRVPKVSASHLE 217

RESULT 176

AA92662

ID AAY92662 standard; protein; 703 AA.

AC AAY92662;

DT 10-AUG-2000 (first entry)

DE Mutant murine PSM splice variant construct, mPSM'Y.

XX Prostate specific membrane antigen; splice variant; mutant; vaccination;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.

OS Mus musculus.
 OS Synthetic.

FH Key Location/Qualifiers
 FT Peptide 631..651
 FT /label= P30

PN WO200020027-A2.

PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX

PS Example 1; Page; 220pp; English.

XX AAY92659-62 are mutant immunogenized murine prostate specific membrane
CC antigen (PSM) constructs, which contain a foreign epitope, P30. The
CC analogues can be used to study whether autotolerance to mouse PSM can be
CC broken in mice by immunisation and/or DNA vaccination against murine PSM
CC using murine PSM analogues. Immunogenic analogues of PSM can be used in
CC the claimed method as an autovaccine to induce a CTL response. The method
CC is used for inducing immune responses against weakly immunogenic cell-
CC associated peptide antigens (PA) such as those associated with cancers
CC (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
CC presentation by antigen producing cells (APCs) of the animals immune
CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
CC the PA and/or at least 1 B-cell group derived from the cell-associated PA
CC ; and (2) at least 1 first T helper cell group which is foreign to the
CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
CC comprising a substantial part of all known and predicted CTL and B-cell
CC epitopes of the respective PA and including at least one foreign T helper
CC epitope are also claimed. The method is used to treat prostate,
CC prostate/breast or breast cancer when the PA is human PSM, FGF8b and
CC Her2, respectively. Note: This sequence was constructed from the murine
CC PSM splice variant (AAY92624), which appears on pages 210-213 of the
CC specification
XX

SQ Sequence 703 AA;

Query Match 100.0%; Score 112; DB 3; Length 703;
Best Local Similarity 100.0%; Pred. No. 4.3e-10; Indels 0; Gaps 0;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 631 FNNFTVSFWLRVPKVSASHLE 651
|||||

RESULT 177

ABR82479
ID ABR82479 standard; protein; 708 AA.

AC ABR82479;

DT 20-NOV-2003 (first entry)

DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
XX

OS Synthetic.

XX Key Location/Qualifiers
FH Peptide 1..34
FT /note= "signal peptide"
FT Protein 35..708
FT /note= "mature protein"
XX

PN WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK0000031.

XX 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

PT Inducing an immune response in humans against autologous carcinoembryonic antigen (CEA) comprises administering a modified CEA polypeptide, a

XX
DR
XX

WPI; 2003-587260/55.
N-PSDB; ACF35966.

PT Inducing an immune response in humans against autologous carcinoembryonic antigen (CEA) comprises administering a modified CEA polypeptide, a
PT nucleic acid encoding the polypeptide, or a microorganism expressing the polypeptide.
XX

XX Disclosure; Page 121-124; 140pp; English.

XX The invention relates to inducing an immune response against autologous carcinoembryonic antigen (CEA) in an animal, e.g. human. The method involves effecting uptake and processing by antigen presenting cells (APCs) in the animal of at least 1 modified CEA polypeptide or of a nucleic acid encoding the modified CEA polypeptide or of a microorganism or virus expressing the modified CEA polypeptide to induce a CTL response and an antibody response that targets the autologous CEA. The method is useful in immunizing actively against diseases characterized by cells that express CEA. The present sequence represents a modified human CEA polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced in its sequence
XX

SQ Sequence 708 AA;

Query Match 100.0%; Score 112; DB 7; Length 708;
Best Local Similarity 100.0%; Pred. No. 4.3e-10; Indels 0; Gaps 0;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 642 FNNFTVSFWLRVPKVSASHLE 662
|||||

RESULT 178

ABR82480

ID ABR82480 standard; protein; 713 AA.

XX ABR82480;

DT 20-NOV-2003 (first entry)

DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
XX

OS Synthetic.

XX Key Location/Qualifiers
FH Peptide 1..34
FT /note= "signal peptide"
FT Protein 35..713
FT /note= "mature protein"
XX

PN WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK0000031.

XX 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

XX WPI; 2003-587260/55.

DR N-PSDB; ACF35967.

XX Inducing an immune response in humans against autologous carcinoembryonic antigen (CEA) comprises administering a modified CEA polypeptide, a

PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

PS Disclosure; Page 128-131; 140pp; English.

XX The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence

XX SQ Sequence 713 AA;

Query Match 100.0%; Score 112; DB 7; Length 713;
 Best Local Similarity 100.0%; Pred. No. 4.3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 513 FNNFTVSFWLRVPKVSASHLE 533

RESULT 179

ABR82478
 ID ABR82478 standard; protein; 717 AA.

XX AC ABR82478;

DT 20-NOV-2003 (first entry)

XX DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.

XX OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide 1..34
 FT Protein 35..717
 FT /note= "signal peptide"
 FT /note= "mature protein"

XX WO2003059379-A2.

XX PD 24-JUL-2003.

XX PF 17-JAN-2003; 2003WO-DK000031.

XX PR 17-JAN-2002; 2002DK-00000082.

XX PR 17-JAN-2002; 2002US-0350047P.

XX PA (PHAR-) PHARMEXA AS.

XX PI Klysner S, Voldborg B;

XX DR WPI; 2003-587260/55.

XX DR N-PSDB; ACF35964.

XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

XX PS Disclosure; Page 114-117; 140pp; English.

XX The invention relates to inducing an immune response against autologous

CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence

XX SQ Sequence 717 AA;

Query Match 100.0%; Score 112; DB 7; Length 717;
 Best Local Similarity 100.0%; Pred. No. 4.4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 693 FNNFTVSFWLRVPKVSASHLE 713

RESULT 180

AA92637
 ID AA92637 standard; protein; 750 AA.

XX AC AA92637;

DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM2.1.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 91..105
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX PD 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX PI Gautam A, Birk P, Karlsson G;

XX DR WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AA92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are

preserved in the immunogenized forms. The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively. Note: This sequence was constructed from the wild type human PSM (AAY92619), which appears on pages 184-187 of the specification

xx SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 181

AAAY92639
ID AAY92639 standard; protein; 750 AA.

AC AAY92639;

XX 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM5.1.
KW Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.
OS Synthetic.

Key Location/Qualifiers
FT Peptide 21..41
/label= P30
/note= "foreign epitope"
FT Peptide 305..319
/label= P2
/note= "foreign epitope"

XX WO2000020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.

PS Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30). The immunogenic analogues of PSM can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody binding regions and cysteine residues involved in disulfide bonds are preserved in the immunogenized forms. The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively. Note: This sequence was constructed from the wild type human PSM (AAY92619), which appears on pages 184-187 of the specification

xx SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 182

AAAY92628
ID AAY92628 standard; protein; 750 AA.

AC AAY92628;

XX 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM6.1.
KW Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.
OS Synthetic.

Key Location/Qualifiers
FT Peptide 21..41
/label= P30
/note= "foreign epitope"
FT Peptide 448..462
/label= P2
/note= "foreign epitope"

XX WO2000020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;
 DR WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 183
 AAY92631
 ID AAY92631 standard; protein; 750 AA.
 AC AAY92631;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM1.6.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers
 FH Key 24..38
 FT Peptide /label= P2
 FT /note= "foreign epitope"
 FT Peptide 443..463
 FT /label= P30
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 DR WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 443 FNNFTVSFWLRVPKVSASHLE 463

RESULT 184

AAY92645

ID AAY92645 standard; protein; 750 AA.

XX AAY92645;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM8.3.
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers
 FH Key 210..230
 FT Peptide /label= P30
 FT /note= "foreign epitope"
 FT Peptide 606..620
 FT /label= P2

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT 607..627
 FT /label= P30
 FT /note= "foreign epitope"
 XX
 PN WO200020027-A2.
 XX
 PD 13-APR-2000.
 XX
 PF 05-OCT-1999; 99WO-DK000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 DR WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSWLRVPKVSASHLE 21
 |||||
 Db 607 FNNFTVSWLRVPKVSASHLE 627
 RESULT 187
 AAY92638

ID AAY92638 standard; protein; 750 AA.
 XX
 AC AAY92638;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM3.1.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT 213..227
 FT /label= P2
 FT /note= "foreign epitope"
 XX
 PN WO200020027-A2.
 XX
 PD 13-APR-2000.
 XX
 PF 05-OCT-1999; 99WO-DK000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 DR WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVFWLRVFKVSASHLE 21
Db 21 FNNFTVFWLRVFKVSASHLE 41

RESULT 188

ID AAY92630 standard; protein; 750 AA.

XX AAY92630;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM10.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide .21..41

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 674..688

FT /label= P2

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX Example 1; Page; 220pp; English.

CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVFWLRVFKVSASHLE 21

Db 21 FNNFTVFWLRVFKVSASHLE 41

RESULT 189

AAY92633

ID AAY92633 standard; protein; 750 AA.

XX AAY92633;

DT 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.10.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

XX vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 24..38

FT /label= P2

FT /note= "foreign epitope"

FT Peptide 673..693

FT /label= P30

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide

XX antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane

XX antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

XX The immunogenic analogues of PSM can be used in the claimed method as an

XX autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

XX binding regions and cysteine residues involved in disulfide bonds are

XX preserved in the immunogenized forms. The method is used for inducing

XX immune responses against weakly immunogenic cell-associated peptide

XX antigens (PA) such as those associated with cancers (self-proteins), e.g.

XX human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

XX fibroblast growth factor 8b (FGF8b). The method comprises effecting

XX simultaneous presentation by antigen producing cells (APCs) of the

XX animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

XX group derived from the PA and/or at least 1 B-cell group derived from the

XX cell-associated PA; and (2) at least 1 first T helper cell group which is

XX foreign to the animal. Analogues of human PSM, human Her2 and

XX human/murine FGF8b comprising a substantial part of all known and

XX predicted CTL and B-cell epitopes of the respective PA and including at

XX least one foreign T helper epitope are also claimed. The method is used

XX to treat prostate, prostate/breast or breast cancer when the PA is human

XX PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

XX from the wild type human PSM (AAY92619), which appears on pages 184-187

XX of the specification

CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVPKVSASHLE 21
 |||||
 Db 673 FNNFTVSWLRVPKVSASHLE 693

RESULT 190
 AA92646
 ID AA92646 standard; protein; 750 AA.
 AC AA92646;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM10.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers
 FT Peptide 210..230
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AA92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVPKVSASHLE 21
 |||||
 Db 210 FNNFTVSWLRVPKVSASHLE 230

RESULT 191

AA92634

ID AA92634 standard; protein; 750 AA.

AC AA92634;

DT 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.2.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 87..107
 FT /label= P30
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AA92627-49 are mutant immunogenized human prostate specific membrane

antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30). The immunogenic analogues of PSM can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody binding regions and cysteine residues involved in disulfide bonds are preserved in the immunogenized forms. The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively. Note: This sequence was constructed from the wild type human PSM (AA92619), which appears on pages 184-187 of the specification

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 87 FNNFTVSFWLRVPKVSASHLE 107

RESULT 192

AA92629
ID AA92629 standard; protein; 750 AA.

XX AA92629;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM8.1.
XX Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.
OS Synthetic.

Key Location/Qualifiers
FT Peptide 21..41
FT /label= P30
FT /note= "foreign epitope"
FT 606...620
FT /label= P2
FT /note= "foreign epitope"

PN WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P., Karlsson G;
XX WPI; 2000-349917/30.

XX

PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AA92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AA92619), which appears on pages 184-187
CC of the specification

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 193

AA92636

ID AA92636 standard; protein; 750 AA.

XX AA92636;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.5.
XX Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.
OS Synthetic.

Key Location/Qualifiers
FT Peptide 24..38
FT /label= P2
FT /note= "foreign epitope"
FT 301..321
FT /label= P30
FT /note= "foreign epitope"

PN WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide

PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing

CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

CC group derived from the PA and/or at least 1 B-cell group derived from the

CC cell-associated PA; and (2) at least 1 first T helper cell group which is

CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and

CC predicted CTL and B-cell epitopes of the respective PA and including at

CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human

CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

CC from the wild type human PSM (AAY92619), which appears on pages 184-187

CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 301 FNNFTVSFWLRVPKVSASHLE 321

RESULT 194

AAY92642

ID AAY92642 standard; protein; 750 AA.

XX AC AAY92642;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM0.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

PF 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011F.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide

PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing

CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

CC group derived from the PA and/or at least 1 B-cell group derived from the

CC cell-associated PA; and (2) at least 1 first T helper cell group which is

CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and

CC predicted CTL and B-cell epitopes of the respective PA and including at

CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human

CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

CC from the wild type human PSM (AAY92619), which appears on pages 184-187

CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 195

AAY92644

ID AAY92644 standard; protein; 750 AA.

XX AC AAY92644;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM6.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 210..230

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 448..462

```

FT  /label= P2
FT  /note= "foreign epitope"
XX
PN  WO200020027-A2.
XX
XX  13-APR-2000.
XX
PF  05-OCT-1999; 99WO-DK000525.
XX
XX  05-OCT-1998; 98DK-00001261.
PR  20-OCT-1998; 98US-0105011P.
XX
XX  (MEBI-) M & E BIOTECH AS.
XX
XX  Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI  Gautam A, Birk P, Karlsson G;
XX
XX  WPI; 2000-349917/30.
XX
XX  Inducing immune responses to weakly immunogenic, tumor associated peptide
PT  antigens for the treatment of breast and prostate cancer.
XX
XX  Example 1; Page; 220pp; English.
XX
XX  AAY92627-49 are mutant immunogenized human prostate specific membrane
CC  antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC  The immunogenic analogues of PSM can be used in the claimed method as an
CC  autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC  binding regions and cysteine residues involved in disulfide bonds are
CC  preserved in the immunogenized forms. The method is used for inducing
CC  immune responses against weakly immunogenic cell-associated peptide
CC  antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC  human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC  fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC  simultaneous presentation by antigen producing cells (APCs) of the
CC  animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC  group derived from the PA and/or at least 1 B-cell group derived from the
CC  cell-associated PA; and (2) at least 1 first T helper cell group which is
CC  foreign to the animal. Analogues of human PSM, human Her2 and
CC  human/murine FGF8b comprising a substantial part of all known and
CC  predicted CTL and B-cell epitopes of the respective PA and including at
CC  least one foreign T helper epitope are also claimed. The method is used
CC  to treat prostate, prostate/breast or breast cancer when the PA is human
CC  PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC  from the wild type human PSM (AAY92619), which appears on pages 184-187
CC  of the specification
XX
XX  Sequence 750 AA;
XX
XX  Query Match 100.0%; Score 112; DB 3; Length 750;
XX  Best Local Similarity 100.0%; Pred. No. 4.6e-10;
XX  Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 FNNFTVSFWLRVPKVSASHLE 21
Db  260 FNNFTVSFWLRVPKVSASHLE 280

RESULT 196
AAY92659
ID  AAY92659 standard; protein; 756 AA.
XX
XX  AAY92659;
XX
XX  10-AUG-2000 (first entry)
XX
XX  Mutant murine prostate specific membrane antigen construct, mPSMX.
XX
XX  Prostate specific membrane antigen; immunogenized construct; mutant;
KW  vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX  prostate cancer; cell-associated peptide antigen; foreign epitope.
XX
XX  Mus musculus.
OS

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OS  Synthetic.
XX
XX  Key Location/Qualifiers
FT  Peptide 255.275
FT
XX  /label= P30
XX
XX  WO200020027-A2.
XX
XX  13-APR-2000.
XX
XX  05-OCT-1999; 99WO-DK000525.
XX
XX  05-OCT-1998; 98DK-00001261.
PR  20-OCT-1998; 98US-0105011P.
XX
XX  (MEBI-) M & E BIOTECH AS.
XX
XX  Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI  Gautam A, Birk P, Karlsson G;
XX
XX  WPI; 2000-349917/30.
XX
XX  Inducing immune responses to weakly immunogenic, tumor associated peptide
PT  antigens for the treatment of breast and prostate cancer.
XX
XX  Example 1; Page; 220pp; English.
XX
XX  AAY92659-62 are mutant immunogenized murine prostate specific membrane
CC  antigen (PSM) constructs, which contain a foreign epitope, P30. The
CC  analogues can be used to study whether autotolerance to mouse PSM can be
CC  broken in mice by immunisation and/or DNA vaccination against murine PSM
CC  using murine PSM analogues. Immunogenic analogues of PSM can be used in
CC  the claimed method as an autovaccine to induce a CTL response. The method
CC  is used for inducing immune responses against weakly immunogenic cell-
CC  associated peptide antigens (PA) such as those associated with cancers
CC  (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
CC  growth factor 8b (FGF8b). The method comprises effecting simultaneous
CC  presentation by antigen producing cells (APCs) of the animals immune
CC  system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
CC  the PA and/or at least 1 B-cell group derived from the cell-associated PA
CC  ; and (2) at least 1 first T helper cell group which is foreign to the
CC  animal. Analogues of human PSM, human Her2 and human/murine FGF8b
CC  comprising a substantial part of all known and predicted CTL and B-cell
CC  epitopes of the respective PA and including at least one foreign T helper
CC  epitope are also claimed. The method is used to treat prostate,
CC  prostate/breast or breast cancer when the PA is human PSM, FGF8b and
CC  Her2, respectively. Note: This sequence was constructed from the wild
CC  type murine PSM (AAY92623), which appears on pages 204-206 of the
CC  specification
XX
XX  Sequence 756 AA;
XX
XX  Query Match 100.0%; Score 112; DB 3; Length 756;
XX  Best Local Similarity 100.0%; Pred. No. 4.6e-10;
XX  Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 FNNFTVSFWLRVPKVSASHLE 21
Db  255 FNNFTVSFWLRVPKVSASHLE 275

RESULT 197
AAY92660
ID  AAY92660 standard; protein; 761 AA.
XX
XX  AAY92660;
XX
XX  10-AUG-2000 (first entry)
XX
XX  Mutant murine prostate specific membrane antigen construct, mPSMY.
XX  Prostate specific membrane antigen; immunogenized construct; mutant;
KW  vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX

```


XX DE TeNT-Hc-DiPT HN domain-factor Xa linker-SpIC protein fusion construct.
 XX DE
 KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 KW binding domain; SpIC protein.
 XX DE
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Salmonella typhimurium.
 OS Unidentified.
 OS Chimeric.
 XX DE
 PN WO200296467-A2.
 XX DE
 XX DE
 PD 05-DEC-2002.
 XX DE
 XX DE
 PF 21-MAY-2002; 2002WO-GB002384.
 XX DE
 XX DE
 PR 24-MAY-2001; 2001GB-00012687.
 XX DE
 XX DE (MTCR-) MICROBIOLOGICAL RES AUTHORITY.
 FA Sutton JM, Shone CC;
 PI WPI; 2003-167247/16.
 XX DE
 XX DE Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 PT
 PS Example 12; Page 117-120; 130pp; English.
 XX DE
 XX DE The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DiPT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), factor Xa linker peptide and Salmonella typhimurium
 CC SpIC protein. This sequence is used in the exemplification of the
 CC invention
 XX DE
 SQ Sequence 810 AA;
 Query Match 100.0%; Score 112; DB 6; Length 810;
 Best Local Similarity 100.0%; Pred. No. 5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 440 FNNFTVSFWLRVPKVSASHLE 460
 RESULT 200
 ADL90085
 ID ADL90085 standard; protein; 875 AA.
 XX DE

AC ADL90085;
 XX DE
 DT 17-JUN-2004 (first entry)
 XX DE
 DE Tetanus toxin protein, SEQ ID 25.
 KW Immune response; immunoglobulin; Ig; tetanus toxin.
 KW Unidentified.
 OS
 XX WO2004027049-A2.
 PN
 XX 01-APR-2004.
 PD
 XX 18-SEP-2003; 2003WO-US030188.
 PF
 XX 20-SEP-2002; 2002US-04112219P.
 PR
 PR 14-MAR-2003; 2003WO-US007995.
 XX DE
 XX (ASTR-) ASTRAL INC.
 PA
 XX Bot A, Wang L, Smith D, Phillips B;
 PI WPI; 2004-295415/27.
 XX DE
 DR Generating an immune response to an antigen, useful for generating
 XX desired T cell responses comprises administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 PT
 XX Disclosure; Fig 1J; 154pp; English.
 PS
 XX The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX DE
 SQ Sequence 875 AA;
 Query Match 100.0%; Score 112; DB 8; Length 875;
 Best Local Similarity 100.0%; Pred. No. 5.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 507 FNNFTVSFWLRVPKVSASHLE 527
 RESULT 201
 AAE07889
 ID AAE07889 standard; protein; 882 AA.
 XX DE
 AC AAE07889;
 XX DE
 DT 01-NOV-2001 (first entry)
 XX DE
 DE Modified clostridial heavy chain-superoxide dismutase conjugate #1.
 XX DE
 KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
 KW superoxide dismutase; SOD; diphtheria neurotoxin; tetanus neurotoxin;
 KW TeNT.
 XX DE
 OS Geobacillus stearothermophilus.
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX DE
 PN WO200158936-A2.
 XX DE

PD 16-AUG-2001.
 XX
 PF 04-DEC-2000; 2000WO-GB004644.
 XX
 PR 02-DEC-1999; 99GB-00028530.
 PR 07-APR-2000; 2000GB-00008658.
 XX
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 PA
 PI Shone CC, Sutton JM, Silman N;
 XX
 XX WPI; 2001-514643/56.
 DR
 XX
 XX New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX
 XX Example 9; Page 39; 50pp; English.
 PS
 XX
 XX The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain-superoxide dismutase conjugate. This
 CC conjugate comprises bacterial Mn-superoxide dismutase (MnSOD), from
 CC Bacillus stearothermophilus, linker that can be cleaved by thrombin,
 CC translocation domain from diphtheria neurotoxin and a neuronal cell-
 CC specific binding domain from tetanus neurotoxin (TeNT)
 XX
 XX Sequence 882 AA;
 SQ
 Query Match 100.0%; Score 112; DB 4; Length 882;
 Best Local Similarity 100.0%; Pred. No. 5.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVVKVSASHLE 21
 |||||
 DB 512 FNNFTVSFVLRVVKVSASHLE 532
 |||||
 RESULT 202
 AAE07891
 ID AAE07891 standard; protein; 907 AA.
 XX
 AC AAE07891;
 XX
 XX 01-NOV-2001 (first entry)
 DT
 XX
 DE Modified clostridial heavy chain-superoxide dismutase conjugate #3.
 XX
 XX Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
 KW superoxide dismutase; SOD; diphtheria neurotoxin; tetanus neurotoxin;
 KW human; TeNT.
 XX
 OS Homo sapiens.
 OS Geobacillus stearothermophilus.
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 XX WO200158936-A2.
 FN
 XX

PD 16-AUG-2001.
 XX
 PF 04-DEC-2000; 2000WO-GB004644.
 XX
 PR 02-DEC-1999; 99GB-00028530.
 PR 07-APR-2000; 2000GB-00008658.
 XX
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 PA
 PI Shone CC, Sutton JM, Silman N;
 XX
 XX WPI; 2001-514643/56.
 DR
 XX
 XX New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX
 XX Example 9; Page 41; 50pp; English.
 PS
 XX
 XX The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain-superoxide dismutase conjugate. This
 CC conjugate comprises a mitochondrial leader sequence from human Mn-
 CC superoxide dismutase (MnSOD), MnSOD from Bacillus stearothermophilus,
 CC linker that can be cleaved by factor Xa, translocation domain from
 CC diphtheria neurotoxin and a neuronal cell-specific binding domain from
 CC tetanus neurotoxin (TeNT)
 XX
 XX Sequence 907 AA;
 SQ
 Query Match 100.0%; Score 112; DB 4; Length 907;
 Best Local Similarity 100.0%; Pred. No. 5.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVVKVSASHLE 21
 |||||
 DB 537 FNNFTVSFVLRVVKVSASHLE 557
 |||||
 RESULT 203
 AAE35712
 ID AAE35712 standard; protein; 999 AA.
 XX
 AC AAE35712;
 XX
 XX 17-JUN-2003 (first entry)
 DT
 XX
 DE TeNT-Hc-DipT HN domain-factor Xa linker-YopT protein fusion construct.
 XX
 XX Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer's disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain; targeted effector protein; YopT.
 XX
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Yersinia pestis.
 OS Unidentified.
 OS Chimeric.
 XX

PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 XX Sutton JM, Shone CC;
 XX WPI; 2003-167247/16.
 DR Conjugate for modulating cell survival and cell growth, modulating
 XX release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 PT Example 12; Page 87-92; 130pp; English.
 XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DipT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), thrombin linker peptide and Salmonella typhimurium
 CC truncated invasion gene P protein, SigD. This sequence is used in the
 CC exemplification of the invention
 XX
 SQ Sequence 1212 AA;
 Query Match 100.0%; Score 112; DB 6; Length 1212;
 Best Local Similarity 100.0%; Pred. No. 8e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 842 FNNFTVSFWLRVPKVSASHLE 862
 RESULT 208
 AAB61169
 ID AAB61169 standard; protein; 1315 AA.
 XX
 AC AAB61169;
 XX
 DT 02-APR-2001 (first entry)
 XX
 DE Clostridium tetani TeNT.
 XX
 KW Clostridium tetani; TeNT; tetanus toxin; antibacterial; vaccine;
 KW TeNT fragment C; infection.
 XX
 OS Clostridium tetani.
 XX
 PN WO200100839-A1.
 XX
 PD 04-JAN-2001.
 XX
 PF 23-JUN-2000; 2000WO-GB002428.
 XX
 PR 25-JUN-1999; 99GB-00014861.
 XX
 PA (UNLO) IMPERIAL COLLEGE SCI TECHNOLOGY & MED.
 XX Fairweather NF, Sinha K;
 PI
 XX WPI; 2001-123014/13.
 DR

XX New polypeptide, useful for treating infections of Clostridium tetani,
 PT comprises tetanus toxin fragment with a mutation in a loop region,
 XX
 XX Disclosure; Page 39; 43pp; English.
 XX
 CC The present sequence is given in a specification relating to a novel
 CC polypeptide comprising tetanus toxin (TeNT) fragment C or its immunogenic
 CC fragment, containing a mutation in a loop region. The mutation results in
 CC a reduction in the binding of TeNT fragment C or its immunogenic fragment
 CC to gangliosides and primary motoneurons, and/or a reduction in the
 CC ability of TeNT fragment C or its immunogenic fragment to undergo
 CC retrograde transport. The polypeptide is useful for treating, preventing
 CC and reducing the susceptibility to Clostridium tetani infection in a
 CC human or animal, and also for producing antibodies which recognise groups
 CC within TeNT polypeptides. Antibody produced against the polypeptide is
 CC also useful for treating Clostridium tetani infection
 XX
 SQ Sequence 1315 AA;
 Query Match 100.0%; Score 112; DB 4; Length 1315;
 Best Local Similarity 100.0%; Pred. No. 8.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 947 FNNFTVSFWLRVPKVSASHLE 967
 RESULT 209
 ADL90423
 ID ADL90423 standard; protein; 1315 AA.
 XX
 AC ADL90423;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Clostridium neurotoxin amino acid sequence SEQ ID NO:141.
 XX
 KW single chain polypeptide; clostridial neurotoxin light chain;
 KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004024909-A2.
 XX
 PD 25-MAR-2004.
 XX
 PF 12-SEP-2003; 2003WO-GB003824.
 XX
 PR 12-SEP-2002; 2002US-00241596.
 XX
 PA (HEAL-) HEALTH PROTECTION AGENCY.
 XX
 PI Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
 PI Wayne J;
 XX
 XX WPI; 2004-270039/25.
 DR N-PSDB; ADL90422.
 XX
 PT New single chain polypeptides comprising clostridial neurotoxin light and
 PT heavy chains, useful as positive controls for toxin assays, or for
 PT developing vaccines against clostridial toxin.
 XX
 PS Disclosure; SEQ ID NO 141; 588pp; English.
 XX
 CC The present invention describes a single chain polypeptide comprising
 CC clostridial neurotoxin light and heavy chains. The single chain
 CC polypeptide comprises 2 domains: the first domain is a clostridial
 CC neurotoxin light chain, or its fragment or variant, which is capable of
 CC cleaving one or more vesicle or plasma membrane associated proteins

essential to exocytosis; the second domain is a clostridial neurotoxin heavy chain H-N portion, or its fragment or variant, which is capable of translocating the polypeptide into a cell and/or increasing the solubility of the polypeptide compared to the solubility of the first domain on its own. The second domain lacks a functional C-terminal part of a clostridial neurotoxin heavy chain, designated H-C, which renders the polypeptide incapable of binding to cell surface receptors that are the natural cell surface receptors to which native clostridial neurotoxin binds. Also described is a nucleic acid molecule encoding the single chain polypeptide described above. The single chain polypeptide has antibacterial activity, and can be used in vaccines. The single chain polypeptides can be used as positive controls for toxin assays, as reagent components for the synthesis of therapeutic molecules, or for developing vaccines against clostridial toxin. The polypeptides are also useful as non-toxic standards for the assessment and development of in vitro assays for detection of functional botulinum or tetanus neurotoxins in foodstuffs or environmental samples. The present sequence is used in the exemplification of the present invention.

XX SQ Sequence 1315 AA;

Query Match 100.0%; Score 112; DB 8; Length 1315;
Best Local Similarity 100.0%; Pred. No. 8.7e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 947 FNNFTVSFWLRVPKVSASHLE 967

RESULT 210

AAB85697
ID AAB85697 standard; protein; 1807 AA.

XX AC AAB85697;

XX DT 29-OCT-2001 (first entry)

XX DE Recombinant protein ViVacip.

XX KW Multivalent protein; immune response; Plasmodium vivax; parasite;
XX KW protozoacide; vaccine; malaria; recombinant; ViVac1.

XX OS Synthetic.

XX OS Plasmodium vivax.

XX PN WO200155181-A2.

XX PD 02-AUG-2001.

XX PF 29-JAN-2001; 2001WO-US002937.

XX PR 31-JAN-2000; 2000US-0179213P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Lal AA, Xiao L, Zhou Z;

XX DR WPI; 2001-514557/56.

XX DR N-PSDB; AAH47058.

XX PT New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial infection.

XX PS Claim 5; Page 39-45; 59pp; English.

XX CC The invention relates to recombinant multivalent proteins (I) that stimulate an immune response to Plasmodium vivax. (I) comprises antigenic determinants, fragments or conservative substitutions, derived from more than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a

CC protective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as research or diagnostic reagents for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple stages of the malarial parasite. The antibodies produced are useful for the detection or measurement of antigenic epitopes derived from one or more stages in a life cycle of a parasite, particularly P. vivax. The vaccine comprising the recombinant proteins, is cost-effective, health-promoting intervention for controlling, preventing or treating the incidence of malaria. The present sequence represents the amino acid sequence against P. vivax

XX SQ Sequence 1807 AA;

Query Match 100.0%; Score 112; DB 4; Length 1807;
Best Local Similarity 100.0%; Pred. No. 1.3e-09;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 841 FNNFTVSFWLRVPKVSASHLE 861

RESULT 211

AAB85698
ID AAB85698 standard; protein; 2028 AA.

XX AC AAB85698;

XX DT 29-OCT-2001 (first entry)

XX DE Recombinant protein ViVac2p.

XX KW Multivalent protein; immune response; Plasmodium vivax; parasite;
XX KW protozoacide; vaccine; malaria; recombinant; ViVac2.

XX OS Synthetic.

XX OS Plasmodium vivax.

XX PN WO200155181-A2.

XX PD 02-AUG-2001.

XX PF 29-JAN-2001; 2001WO-US002937.

XX PR 31-JAN-2000; 2000US-0179213P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Lal AA, Xiao L, Zhou Z;

XX DR WPI; 2001-514557/56.

XX DR N-PSDB; AAH47055.

XX PT New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial infection.

XX PS Claim 5; Page 48-55; 59pp; English.

XX CC The invention relates to recombinant multivalent proteins (I) that stimulate an immune response to Plasmodium vivax. (I) comprises antigenic determinants, fragments or conservative substitutions, derived from more than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a protective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as research or diagnostic reagents for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple

CC stages of the malarial parasite. The antibodies produced are useful for
 CC the detection or measurement of antigenic epitopes derived from one or
 CC more stages in a life cycle of a parasite, particularly *P. vivax*. The
 CC vaccine comprising the recombinant proteins, is cost-effective, health-
 CC promoting intervention for controlling, preventing or treating the
 CC incidence of malaria. The present sequence represents the amino acid
 CC sequence of the recombinant protein ViVac2p, a multivalent and multistage
 CC vaccine against *P. vivax*

XX
 SQ Sequence 2028 AA;

Query Match 100.0%; Score 112; DB 4; Length 2028;
 Best Local Similarity 100.0%; Prd. No. 1.4e-09;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1062 FNNFTVSFWLRVPKVSASHLE 1082

Search completed: January 26, 2005, 07:08:42
 Job time : 134.667 secs